

Appendix A
Public Notification that a potential event was occurring
(40 CFR §50.14(c)(1)(i))

FIGURE A-1
NATIONAL WEATHER SERVICE PUBLIC ZONES

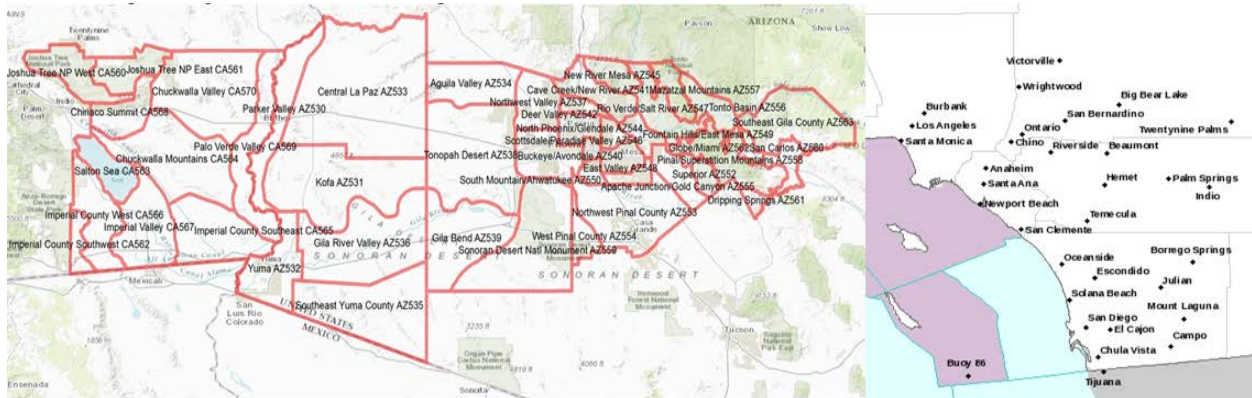


Fig A-1: Illustrates the public zones serviced by the National Weather Service Office in Phoenix and San Diego. Imperial County, including southeast sections of Riverside County are part of the reporting public zone areas from the Phoenix office

FIGURE A-2
TROUGH DEEPENS AS IT APPROACHES – BRINGS STRONG WINDS

National Weather Service San Diego CA

820 PM PST Mon Dec 12 2016

.SYNOPSIS...

Fair and mild through Wednesday under weak high pressure aloft. A trough of low pressure will deepen over the West on Friday, bringing cooler conditions, strong onshore winds, and rain. Showers of rain and snow may linger into Saturday. Warm on Wednesday, then cooler through Saturday, due to clouds and precipitation. Fair and dry with cool nights and slightly warmer days early next week as winds turn offshore.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

Thursday through Sunday: The GFS, ECMWF and Canadian models show a deepening trough off the Northern California Coast Thursday, moving inland Friday. A moisture plume over the Pacific takes aim at Central and Southern California Thursday and Thursday night. Precipitable water values increase to around 1.3-1.4". Weak isentropic lift in the WAA ahead of the main trough may produce a few areas of light rain Thursday as this conveyor belt of moisture approaches the coast. But the deep layer moisture arrives Thursday evening, and the most significant rains will fall Thursday evening through Friday morning when the atmosphere becomes nearly saturated from the surface to 300 mb.

Winds will be strong with this system with a 130kt 300 mb jet core and 30-40kt southwest 850 mb winds Thursday night into Friday.

Jet dynamics combined with orographic lift from strong low level flow will elevate the chances for periods of moderate to heavy precipitation along the southwest mountain slopes Thursday night. There is the potential for a 6-12-hour period of enhanced orographic rainfall on the south and southwest facing slopes where amounts could exceed 3 inches. The trough axis passes Friday afternoon with trailing westerly flow enhancing precip on the west facing slopes through Friday night. Dry Sunday and Monday in northerly flow aloft.

Fig. A-2: As early as December 12 the trough was forecasted to deepen as it approached and bring high winds on Thursday, December 15, and Friday, December 16. Source: Iowa Environmental Mesonet;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612130420>.

FIGURE A-3 ONSHORE FLOW WITH GUSTY WINDS EXPECTED

Area Forecast Discussion

National Weather Service San Diego CA

345 AM PST Tue Dec 13 2016

.SYNOPSIS...

Through Wednesday...onshore flow will maintain seasonal high temperatures with night and morning coastal low clouds and patchy fog and periods of high clouds. **For late Thursday through early Saturday...a low pressure system will move inland through Southern California bringing cooler...much stronger onshore flow with strong and gusty southwest to west winds on Thursday night and Friday becoming west to northwest Friday night.** Lighter precipitation will develop Thursday afternoon and evening...with more significant precipitation late Thursday night and Friday...then with decreasing showers for Friday night. Well below average high temperatures for Friday through Sunday. Gusty northeast winds for Sunday and Monday...then weaker winds and much warmer for the middle part of next week.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

Through Wednesday night...a low pressure system off the West Coast will maintain onshore flow across Southern California with near seasonal high temperatures. There will be areas of night and morning coastal low clouds and patchy fog extending into portions of the valleys. There will also be periods of high clouds.

For late Thursday through early Saturday...a low pressure system will move inland through Southern California. The model to model and run to run differences with the details continue. The trend of the past 24 hours has been to be a little less with the precipitation totals and a little slower with the timing of the period of more significant precipitation. Whether these trends will persist remains to be seen.

This low pressure system will move southward along the California Coast on Thursday night and Friday...then move inland Friday night and Saturday. A plume of subtropical moisture will be directed into Southern California on Thursday and Thursday night...then be shunted to the south and east on Friday. Some lighter precipitation may develop along and west of the mountains Thursday afternoon. More significant precipitation is expected to spread eastward across Southern California Thursday night into Friday morning. Periods of showers will continue for Friday afternoon and evening...decreasing late Friday night.

Southwest to west winds will strengthen Thursday night...with the strongest and most widespread winds expected Friday...with winds becoming west to northwest and decreasing late Friday night. High temperatures will cool to below average on Friday with well below average high temperatures for next weekend. The coldest air is expected to arrive late Friday and Friday night.

Fig. A-3: On December 13 the low pressure was forecasted to strengthen the onshore flow and create gusty winds Thursday night and into Friday. Source: Iowa Environmental Mesonet;

<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612131145>.

FIGURE A-4 STRONGEST WINDS TO IMPACT FRIDAY

Area Forecast Discussion

National Weather Service San Diego CA

927 AM PST Tue Dec 13 2016

.SYNOPSIS...

Very quite weather will continue through Thursday morning. The next storm system will arrive Thursday evening, with the best rainfall chances expected Thursday night and Friday morning (during the morning commute). Rain and wind will be the biggest impacts with this storm, as conditions will likely remain to warm for any significant snowfall. Cool weather will prevail through the weekend with temperatures 5 to 10 degrees below average. Offshore winds are possible early next week.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...

SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

For today through Wednesday, very quiet weather conditions will continue with very little in the way of impactful weather. Winds will remain light with temperatures hovering near average along the coast, to several degrees above average in the mountains and deserts. Patchy dense fog will be possible over the coastal mesas and valleys again Wednesday morning.

The next weather maker will arrive on our doorstep Thursday, with increasing SW flow aloft and mid/high level moisture (and associated high cloud cover) through the day. Model confidence is high that warm SW to WSW flow aloft will continue into Friday morning, with a couple weak impulses migrating through our region. This will keep snow levels high and bring rain to all but the highest peaks through Friday morning. Light shower activity may develop as early as the Thursday evening commute, but the bulk of the rain should fall overnight Thursday through Friday Morning. This event continues to look like an orographically driven event, especially by Friday morning. Preliminary precipitation estimates suggest 0.5 to 1 inch along the coast, with a max of 2 to 4 inches along the coastal slopes. No significant convection is expected with this event and rainfall should diminish over the region by Friday evening as a drier airmass filters in.

The Thursday evening-Friday storm system looks like it will be a decent wind maker as well. Winds should increase Thursday evening over the mountains ridges, with breezy SW winds conditions spreading to the coast and valleys as 850 mb winds increase Friday morning. It currently looks like the strongest winds will impact the mountains and deserts Friday afternoon into Friday night as the primary shortwave and associated jet max sweeps through the region.

Fig. A-4: On December 13 the strongest winds were forecasted to impact the region on Friday. Source: Iowa Environmental Mesonet;
<http://www.wrh.noaa.gov/psr/redirect.php?pil=phxzfppsr&wfo=psr>.

FIGURE A-5
STORM FORECASTED TO BE WIND-MAKER WITH GUSTS OF 60 MPH ON DESERT SLOPES

Area Forecast Discussion

National Weather Service San Diego CA

918 PM PST Tue Dec 13 2016

.SYNOPSIS...

Mild weather will continue through Thursday morning before a storm system arrives Thursday evening. Rain and wind will be the biggest impacts with this storm, as conditions will likely remain too warm for any significant snowfall below 8000 feet. The best rainfall chances are expected Thursday night and Friday morning, during the morning commute. Cool but dry weather will then prevail Sunday through early next week, with temperatures 5 to 10 degrees below seasonal averages. Offshore winds are also possible Sunday through Tuesday.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

From previous discussion...

Through Wednesday, benign weather conditions will continue with very little in the way of impactful weather. Winds will remain light with temperatures hovering near seasonal averages along the coast, to several degrees above average in the mountains and deserts. Patchy dense fog will be possible over the coastal mesas and valleys again Wednesday morning.

A Pacific storm will move into SOCAL on Thursday, with increasing SW flow aloft and mid/high level moisture, with associated high clouds through the day. Confidence is high that warm SW to WSW flow aloft will continue into Friday morning, with a couple weak impulses migrating through the region. This will keep snow levels high and bring rain to all areas west of the mtns through Friday morning, except for the highest peaks. Light shower activity may develop as early as the Thursday evening commute, but the bulk of the rain should fall overnight Thursday through Friday Morning. This event continues to look like one where orographics will play a significant role in determining precip distribution, focusing most of the precip along the coastal slopes through Friday morning. Preliminary precipitation estimates suggest 0.5 to 1 inch along the coast, with a max of 2 to 5 inches along the coastal slopes. No significant convection is expected with this event and rainfall should diminish over the region by Friday evening as a drier airmass filters in after frontal passage.

This storm system looks like it will be a good wind-maker as well. Winds should increase Thursday evening over the mountain ridges, with increasing SW winds spreading to the coast and valleys as 850 mb winds increase Friday morning. Winds may mix down to the surface over the coast and valleys, especially Friday morning with the frontal passage. It currently looks like the strongest winds will impact the mountains and deserts Friday afternoon into Friday night as the primary shortwave and associated jet max sweeps through the region. Peak wind gusts along the desert slopes and mountain ridges will exceed 60 mph in some locations.

Fig. A-5: The storm was forecasted to a “decent wind-maker” with gusts along desert slopes projected to reach 60 mph. Source: Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612140518>.

FIGURE A-6
STRONG STORM TO HIT THE REGION THURSDAY AND FRIDAY



Fig. A-6: A strong storm was forecasted to strike the area on Thursday and Friday. Source: NWS San Diego.

FIGURE A-7
SOUTHWEST WINDS FORECASTED TO BE STRONGEST ON FRIDAY



Fig. A-7: The storm was expected to bring the strongest winds on Friday. Source: NWS San Diego.

FIGURE A-8 DAMAGING WINDS FORECASTED FOR THE REGION

URGENT - WEATHER MESSAGE

NATIONAL WEATHER SERVICE SAN DIEGO CA

934 AM PST WED DEC 14 2016

...**DAMAGING WINDS POSSIBLE FROM THE MOUNTAIN RIDGE TOPS TO THE DESERT FLOOR THURSDAY EVENING THROUGH FRIDAY EVENING...**

A PACIFIC STORM SYSTEM WILL MOVE ACROSS SOUTHERN CALIFORNIA THURSDAY NIGHT THROUGH FRIDAY. WINDS WILL STRENGTHEN AND BECOME POTENTIALLY DAMAGING DURING THIS TIME. **THE STRONGEST WINDS ARE FORECAST THURSDAY NIGHT THROUGH FRIDAY AFTERNOON. WIND GUSTS TO AROUND 75 MPH WILL BE POSSIBLE ON THE MOUNTAIN RIDGE TOPS WITH LOCALIZED WIND GUSTS TO 60 MPH POSSIBLE TO THE DESERT FLOOR.**

CAZ055-056-058-060-065-151400-

/O.NEW.KSGX.HW.A.0008.161216T0400Z-161217T0400Z/

SAN BERNARDINO COUNTY MOUNTAINS-RIVERSIDE COUNTY MOUNTAINSSAN

DIEGO COUNTY MOUNTAINS-APPLE AND LUCERNE VALLEYSSAN

GORGONIO PASS NEAR BANNINGINCLUDING

THE CITIES OF...CRESTLINE...LAKE ARROWHEAD...

BIG BEAR CITY...BIG BEAR LAKE...RUNNING SPRINGS...WRIGHTWOOD...

IDYLLWILD-PINE COVE...JULIAN...PINE VALLEY...VICTORVILLE...

HESPERIA...APPLE VALLEY...BANNING...DESERT HOT SPRINGS

934 AM PST WED DEC 14 2016

CAZ061-062-151400-/O.NEW.KSGX.HW.A.0008.161216T0400Z-161217T0400Z/

COACHELLA VALLEY-**SAN DIEGO COUNTY DESERTS** INCLUDING

THE CITIES OF...INDIO...PALM SPRINGS...CATHEDRAL CITY...

PALM DESERT...PALM DESERT COUNTRY...LA QUINTA...COACHELLA...

BORREGO SPRINGS

934 AM PST WED DEC 14 2016

...**HIGH WIND WATCH IN EFFECT FROM THURSDAY EVENING THROUGH FRIDAY EVENING...**

THE NATIONAL WEATHER SERVICE IN SAN DIEGO HAS ISSUED A HIGH WIND WATCH...WHICH IS IN EFFECT FROM THURSDAY EVENING THROUGH FRIDAY EVENING.

* **WINDS...AREAS OF WEST TO SOUTHWEST WINDS 20 TO 40 MPH. GUSTS TO AROUND 75 MPH AT THE MOUNTAIN RIDGE TOPS AND TO AROUND 60 MPH AT ISOLATED LOCALES AT THE DESERT FLOOR.**

* TIMING...THURSDAY EVENING THROUGH FRIDAY EVENING.

* LOCATION...STRONGEST WINDS NEAR MOUNTAIN RIDGE TOPS AND ALONG DESERT MOUNTAIN SLOPES INTO ADJACENT DESERT AREAS.

* **VISIBILITY...LOCALLY REDUCED IN BLOWING SAND AND BLOWING DUST IN THE DESERTS.**

* IMPACTS...STRONG WINDS CAN MAKE DRIVING DIFFICULT...ESPECIALLY FOR DRIVERS OF HIGH PROFILE VEHICLES AND VEHICLES TOWING TRAILERS. WINDS THIS STRONG MAY DOWN TREES AND POWER LINES...AND CAUSE PROPERTY DAMAGE.

Fig. A-8: The storm was expected to bring “damaging winds” to the region. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=NPWSGX&e=201612141734>.

FIGURE A-9
WINDS TO STRENGTHEN IN THE DESERT THROUGH FRIDAY

Area Forecast Discussion

National Weather Service San Diego CA

1001 AM PST Wed Dec 14 2016

...HEAVY MOUNTAIN RAINFALL AND DAMAGING MOUNTAIN TOP TO DESERT FLOOR WINDS POSSIBLE THURSDAY NIGHT THROUGH FRIDAY...

.SYNOPSIS...

A Pacific storm will move across Southern California Thursday night through Friday, bringing widespread rain and strong winds to the mountains and deserts. Cool but dry weather will arrive behind the storm this weekend. Cool weather will continue early next week with potentially gusty offshore winds developing.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...

SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

...Update - Flash Flood Watch and High Wind Watch Issued...

Have issued a Flash Flood Watch for the San Bernardino County Mountains where the focus of heavy rain looks to be with strong upslope winds focused there. 2-5 inches with local maxima to 5"+ possible there. We are forecasting 1-2" across the rest of the SoCal mountains with localized 3" possible, especially San Jacinto and Palomar.

Winds really strengthen Thu night-Friday. Have issued a High Wind Watch for the mountain tops to the desert floor for this timeframe. Gusts to 75 mph possible at the mountain ridge tops and localized gusts to around 60 mph are possible at the desert floor as mountain waves potentially surface.

Fig. A-9: Winds were expected to strengthen into Friday with possibly damaging winds expected on the desert floor. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612141801>.

FIGURE A-10
STRONG GUSTY WINDS ACROSS SE CALIFORNIA
BLOWING DUST LIKELY



Fig. A-10: Strong gusty winds were expected to develop across southeast California with the potential for blowing dust. Source: NWS Phoenix.

FIGURE A-11 STRONG GUSTY WINDS ACROSS SE CALIFORNIA

Area Forecast Discussion

National Weather Service San Diego CA

306 PM PST Wed Dec 14 2016

...Heavy Mountain Rainfall and **Damaging Mountain Top to Desert Floor Winds Possible Thursday Night Through Friday...**

.SYNOPSIS...

A Pacific storm will move across Southern California Thursday night through Friday, bringing widespread rain from the coast to the mountains along with strong and potentially damaging winds in the mountains and deserts. Cool and dry weather will arrive behind the storm this weekend. Potentially gusty offshore winds could develop early next week with slow warming expected.
.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

The main weather story is the incoming Pacific storm to impact SoCal Thursday evening through Friday. This storm has the potential to produce several inches of rain in the mountains along with damaging winds from the mountain ridge tops to the desert floor. The primary impact in the metropolitan areas will be a wet morning commute Friday.

The latest suite of model guidance remains rather consistent from previous runs which leads to increasing confidence with the forecast. Water Vapor imagery shows a sharp trough between SoCal and Hawaii with a plume of moisture, an atmospheric river, aligned from southwest to northeast towards northern California. As the Pacific low moves inland, the atmospheric river will move down the coast and be centered across SoCal Friday morning into the afternoon before moving southeast of the area. PW will be 200-300 percent of average. Wind fields will strengthen rapidly Thu evening with very good upslope flow expected for the mountains, particularly the San Bernardino County Mountains where a Flash Flood Watch is in effect Thu evening through Friday morning. 2-3" of rain with maximum to around 5" is forecast there. This could present flooding concerns, especially in and around recent burn scar locales (Blue Cut and Pilot).

For the rest of the mountains we are forecasting 1-2" of rain with localized 3" amounts possible, especially San Jacinto and Palomar. For the metropolitan areas...0.50" to 1.00" and for the deserts 0.25" or less.

This will be a warm system with snow levels high but they will fall through the day on Friday. The timing of cold air advection with the precip end is a significant challenge. Right now we project snow levels towards the end of the event Fri afternoon to lower into the 7500-8500 FT range. This likely will lead to several inches of snow at the highest peaks, but places like Big Bear likely will see very little.

Winds really strengthen Thu night-Friday. Have issued a High Wind Watch for the mountain tops to the desert floor for this timeframe. Gusts to 75 mph possible at the mountain ridge tops and localized gusts to around 60 mph are possible at the desert floor as mountain waves potentially surface.

Fig. A-11: Strong gusty winds were expected to develop across southeast California with the potential for blowing dust. Source: Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612142306>.

FIGURE A-12
POWERFUL STORM EXPECTED TO HIT SOUTHERN CALIFORNIA



Fig. A-12: A powerful storm system brought rain west of the mountains and high winds east of the mountains. Source: NWS San Diego.

FIGURE A-13
POWERFUL STORM EXPECTED TO HIT SOUTHERN CALIFORNIA

Area Forecast Discussion

National Weather Service San Diego CA

916 PM PST Wed Dec 14 2016

...Heavy Mountain Rainfall and Damaging Mountain Top to Desert Floor Winds Likely Thursday Night Through Friday...

.SYNOPSIS...

A Pacific storm will move across Southern California Thursday night through Friday, bringing widespread rain from the coast to the mountains along with strong and potentially damaging winds in the mountains and deserts. Cool and dry weather will arrive behind the storm this weekend. Potential for significant offshore wind event early next week as high pressure moves into the Great Basin, along with a slow warming trend through mid next week.

Fig. A-13: As the storm closed in it was still forecasted to bring damaging winds to the region. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612150516>.

FIGURE A-14
POWERFUL STORM EXPECTED TO BRING SOUTHWEST WINDS



Fig. A-14: The storm was expected to bring gusty southwest winds to the region. Source: NWS San Diego.

FIGURE A-15
POWERFUL STORM EXPECTED TO BRING DAMAGING WINDS

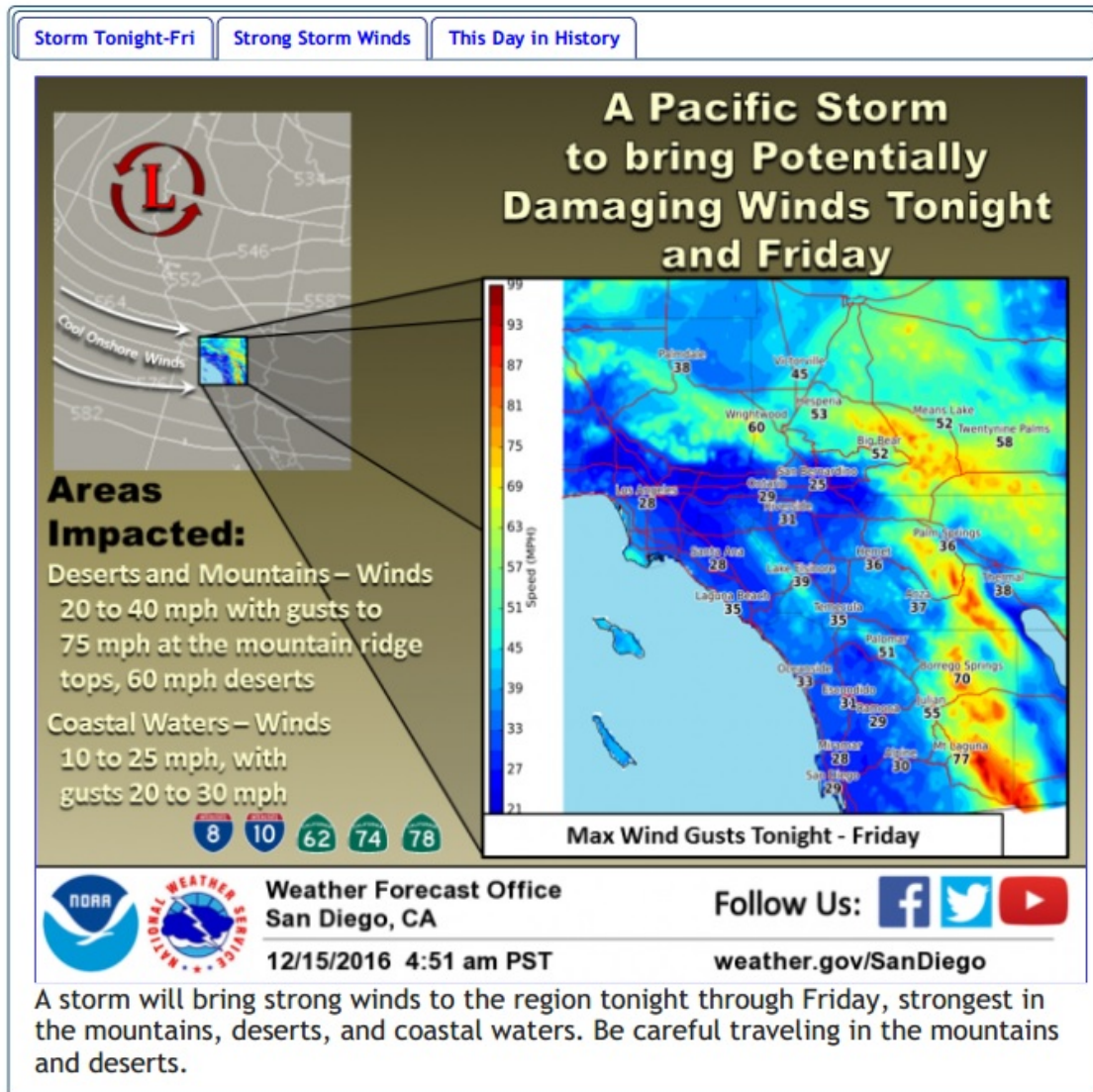


Fig. A-15: The storm was expected to bring damaging winds to the region. Source: NWS San Diego.

FIGURE A-16 HIGH WIND WARNING FOR A WIDE REGION

URGENT - WEATHER MESSAGE
 NATIONAL WEATHER SERVICE SAN DIEGO CA
 627 AM PST THU DEC 15 2016
 ...DAMAGING WINDS LIKELY FROM THE MOUNTAIN RIDGE TOPS TO PORTIONS
 OF THE DESERT FLOOR LATE THIS AFTERNOON THROUGH FRIDAY EVENING...
 .A PACIFIC STORM WILL MOVE ACROSS SOUTHERN CALIFORNIA TONIGHT
 THROUGH FRIDAY. WINDS WILL BECOME VERY STRONG LATE THIS AFTERNOON
 THROUGH FRIDAY WITH GUSTS TO 75 MPH ON MOUNTAIN RIDGE TOPS AND
 LOCALIZED GUSTS TO 60 MPH ON THE DESERT FLOOR. WINDS WILL
 DECREASE FRIDAY EVENING.
 CAZ055-056-058-060-065-160100-
 /O.UPG.KSGX.HW.A.0008.161216T0400Z-161217T0400Z/
 /O.NEW.KSGX.HW.W.0010.161216T0000Z-161217T0400Z/
 SAN BERNARDINO COUNTY MOUNTAINS-RIVERSIDE COUNTY MOUNTAINSSAN
 DIEGO COUNTY MOUNTAINS-APPLE AND LUCERNE VALLEYSSAN
 GORGONIO PASS NEAR BANNINGINCLUDING
 THE CITIES OF...CRESTLINE...LAKE ARROWHEAD...
 BIG BEAR CITY...BIG BEAR LAKE...RUNNING SPRINGS...WRIGHTWOOD...
 IDYLLWILD-PINE COVE...JULIAN...PINE VALLEY...VICTORVILLE...
 HESPERIA...APPLE VALLEY...BANNING...DESERT HOT SPRINGS
 CAZ061-062-160100-
 /O.UPG.KSGX.HW.A.0008.161216T0400Z-161217T0400Z/
 /O.NEW.KSGX.HW.W.0010.161216T0000Z-161217T0400Z/
 COACHELLA VALLEY-SAN DIEGO COUNTY DESERTS INCLUDING
 THE CITIES OF...INDIO...PALM SPRINGS...CATHEDRAL CITY...
 PALM DESERT...PALM DESERT COUNTRY...LA QUINTA...COACHELLA...
 BORREGO SPRINGS
 ...HIGH WIND WARNING IN EFFECT FROM 4 PM THIS AFTERNOON TO 8 PM
 PST FRIDAY...
 THE NATIONAL WEATHER SERVICE IN SAN DIEGO HAS ISSUED A HIGH WIND
 WARNING...WHICH IS IN EFFECT FROM 4 PM THIS AFTERNOON TO 8 PM PST
 FRIDAY. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.
 * WINDS...AREAS OF WEST TO SOUTHWEST WINDS 20 TO 40 MPH. GUSTS
 TO AROUND 75 MPH AT THE MOUNTAIN RIDGE TOPS AND TO AROUND 60
 MPH AT ISOLATED LOCATIONS ON THE DESERT FLOOR.
 * TIMING...LATE THIS AFTERNOON THROUGH FRIDAY EVENING.
 * LOCATION...STRONGEST WINDS NEAR MOUNTAIN RIDGE TOPS AND ALONG
 DESERT MOUNTAIN SLOPES INTO ADJACENT DESERT AREAS.
 * VISIBILITY...LOCALLY REDUCED IN BLOWING SAND AND BLOWING DUST
 IN THE DESERTS.
 * IMPACTS...STRONG WINDS CAN MAKE DRIVING DIFFICULT...ESPECIALLY
 FOR DRIVERS OF HIGH PROFILE VEHICLES AND VEHICLES TOWING
 TRAILERS. WINDS THIS STRONG MAY DOWN TREES AND POWER LINES...
 AND CAUSE PROPERTY DAMAGE.
 PRECAUTIONARY/PREPAREDNESS ACTIONS...
 A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
 OR OCCURRING. SUSTAINED WIND SPEEDS OF AT LEAST 40 MPH OR GUSTS
 OF 58 MPH OR MORE CAN LEAD TO PROPERTY DAMAGE.

Fig. A-16: On December 15 a High Wind Warning supplanted an earlier High Wind Warning for a wide area. Source: NWS San Diego;
http://www.wrh.noaa.gov/total_forecast/getprod.php?wfo=sgx&version=0&font=120&afo=XXXNPWSGX.

FIGURE A-17
HIGH GUSTY WINDS FORECASTED FOR BORRGO SPRINGS

12/15/2016

National Weather Service - NWS San Diego

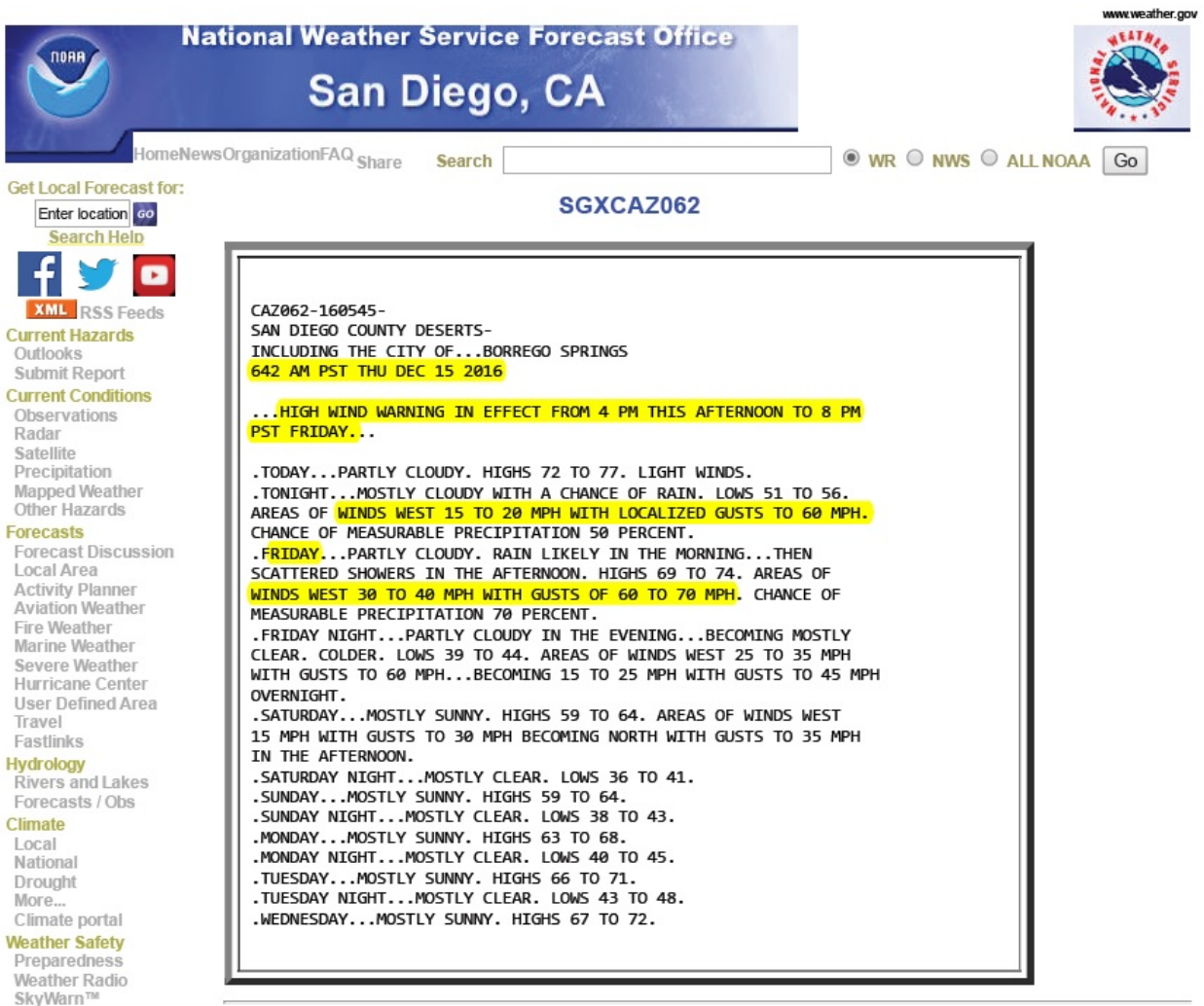


Fig. A-17: Gusty winds were forecasted for Borrego Springs in the San Diego County deserts. This area was upstream from the Imperial County during the wind event. Source: NWS San Diego;
http://www.wrh.noaa.gov/sgx/display_zone.php?sid=SGX&zone=CAZ062.

FIGURE A-18
WINDS ON DESERT SLOPES FORECASTED TO REACH 65 MPH

National Weather Service San Diego CA

659 AM PST Thu Dec 15 2016

...**HIGH WIND WARNING FOR THE MOUNTAIN RIDGE TOPS AND DESERTS...**

...FLASH FLOOD WATCH FOR THE SAN BERNARDINO COUNTY MOUNTAINS...

.SYNOPSIS...

A Pacific storm will move across Southern California tonight and Friday, bringing widespread rain along with strong winds in the mountains and deserts. Cool and dry weather will arrive behind the storm this weekend with brisk offshore winds. Fair and only slightly warmer next week with offshore flow.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE... SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

...**Update - High Wind Warning Issued Mountain Tops to Deserts...** Have upgraded the High Wind Watch to a High Wind Warning for the **mountain ridge tops to the deserts.** Hi-resolution models show high wind potential a few hours earlier so began the warning at 4 PM this afternoon and it continues through Friday evening. WRF continues to show a mountain wave surfacing and impacting portions of the Coachella Valley, especially from Palm Springs to Palm Desert after sunrise through noon on Friday. These can be difficult to forecast, but it has been consistent so gusts to 60 mph are possible there with the most likely time after sunrise through noon Fri.

Rain timing looks on track with NW areas likely to begin seeing showers by late afternoon then spreading into San Diego County this evening.

...Previous Discussion (Issued at 234 AM PST Thu Dec 15 2016)... Areas of fog and even patchy dense fog has been noted early this morning near the coast. High clouds are on the increase and will continue to thicken during the day. A storm will move into Southern California this evening and push through the region Friday. The main players in this storm will be significant rain everywhere and locally heavy rain in the mountains. Strong winds will also be a factor especially in the mountains, deserts and coastal waters. Snow will not be a big factor, unless you happen to be hanging out above 8000 feet. The storm has two sectors, a warm and moist plume that pushes through the region this evening through Friday morning. This will bring us the bulk of the rainfall. The second sector is the trough and associated cold front that moves through late Friday morning. Behind that front the colder air will destabilize the atmosphere enough to keep showers going, but these will gradually decrease from northwest to southeast during the afternoon and evening. The snow level will drop dramatically during the day, but with decreasing showers, very little if any snow is expected below 6000 feet. **Winds will peak out Friday afternoon with gusts along ridgetops and some desert slopes exceeding 65 mph. Some mountain waves could surface on the desert floor with gusts to 60 mph. Winds will decrease rapidly Friday night.**

Fig. A-18: Winds were forecasted to reach 65 mph on the desert slopes. These areas were directly upstream from Imperial County during the wind event. Source: NWS San Diego; http://www.wrh.noaa.gov/total_forecast/getprod.php?prod=XXXAFDSGX&wfo=SGX 2/3.

FIGURE A-19
HIGH POLLUTION ADVISORY ISSUED FOR YUMA COUNTY

AIR QUALITY ALERT
NATIONAL WEATHER SERVICE PHOENIX AZ
958 AM MST THU DEC 15 2016
...**HIGH POLLUTION ADVISORY FOR YUMA COUNTY FRIDAY**...
AN AIRBORNE COARSE PARTICLE HIGH POLLUTION ADVISORY HAS BEEN ISSUED
FOR YUMA COUNTY FOR FRIDAY THROUGH 9 PM MST.
**AN EPISODE OF STRONG AND GUSTY WINDS IS FORECAST TO GENERATE
WIDESPREAD BLOWING DUST THAT MAY RESULT IN LOCAL COARSE PARTICLE
CONCENTRATIONS THAT POSE A HEALTH RISK.** ADVERSE HEALTH EFFECTS
INCREASE AS AIR QUALITY DETERIORATES.
COARSE PARTICULATE MATTER - ALSO KNOWN AS PM-10 - IS AN AIR
CONTAMINANT THAT CAN AGGRAVATE HEART AND LUNG DISEASE CONDITIONS,
ESPECIALLY IN OLDER ADULTS, CHILDREN, AND THOSE WITH ASTHMA. A
DECREASE IN PHYSICAL ACTIVITY IS RECOMMENDED.
CONSOLIDATE YOUR TRAVEL, STABILIZE LOOSE SOILS, SLOW DOWN OR AVOID
TRAVEL ON DIRT ROADS, REDUCE OR ELIMINATE FIREPLACE USE, AND AVOID
USING GAS-POWERED LAWN EQUIPMENT.

Fig. A-19: The expected strength of the gusty winds caused a high pollution advisory to be issued for Yuma County. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AQAPSR&e=201612151658>.

FIGURE A-20
VERY STRONG WINDS EXPECTED THROUGH FRIDAY

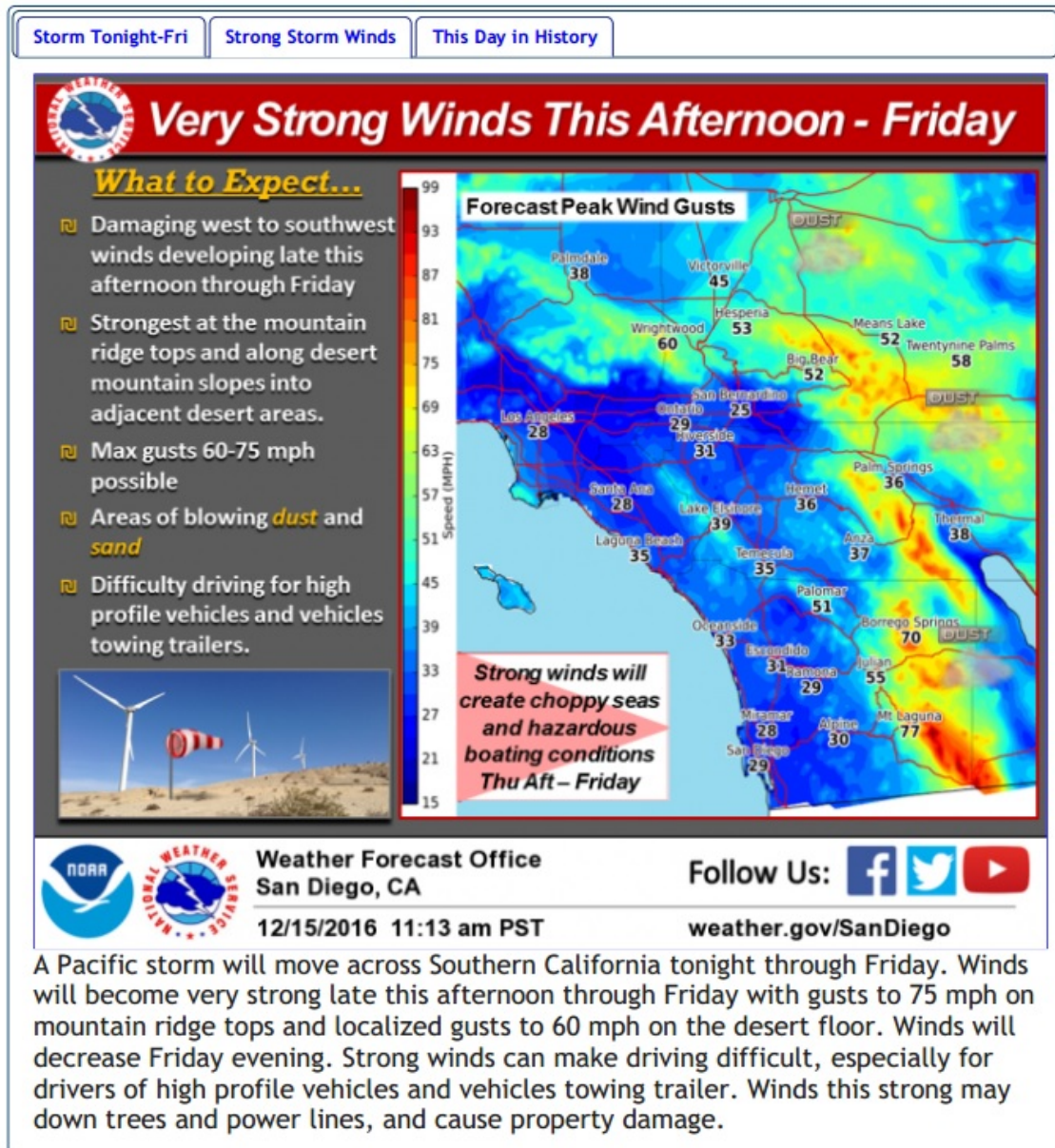


Fig. A-20: Very strong winds were expected to build Thursday becoming strongest on Friday. Gusts of 60mph were expected on the desert floor. Source: NWS San Diego.

FIGURE A-21
ZONE FORECAST INCLUDES WIND ADVISORY FOR IMPERIAL COUNTY

CAZ033-161100-
IMPERIAL COUNTY
 INCLUDING THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...
 IMPERIAL...THE SALTON SEA
 1208 PM PST THU DEC 15 2016
 ...**WIND ADVISORY IN EFFECT FROM 4 AM TO 8 PM PST FRIDAY**...
 .TONIGHT...MOSTLY CLOUDY IN THE EVENING...THEN BECOMING PARTLY
 CLOUDY. A SLIGHT CHANCE OF SHOWERS. NOT AS COOL. LOWS 50 TO 60.
 SOUTHWEST WIND 10 TO 20 MPH. CHANCE OF MEASURABLE RAIN 20 PERCENT.
 .**FRIDAY**...PARTLY SUNNY WITH A SLIGHT CHANCE OF SHOWERS. **PATCHY**
BLOWING DUST IN THE MORNING. AREAS OF BLOWING DUST IN THE AFTERNOON.
VERY WINDY. HIGHS 70 TO 75. **SOUTHWEST WIND 20 TO 30 MPH IN THE**
MORNING INCREASING TO 25 TO 40 MPH IN THE AFTERNOON. GUSTS UP TO
45 MPH IN THE MORNING INCREASING TO 55 MPH IN THE AFTERNOON. CHANCE
 OF MEASURABLE RAIN 10 PERCENT.
 .FRIDAY NIGHT...MOSTLY CLEAR AND VERY WINDY. PATCHY BLOWING DUST IN
 THE EVENING. MUCH COLDER. LOWS 36 TO 46. WEST WIND 25 TO 40 MPH IN
 THE EVENING DECREASING TO 15 TO 25 MPH AFTER MIDNIGHT. GUSTS UP TO
 50 MPH.
 .SATURDAY...SUNNY...WINDY AND MUCH COOLER. HIGHS 58 TO 63. NORTH WIND
 15 TO 25 MPH. GUSTS UP TO 35 MPH.
 .SATURDAY NIGHT...MOSTLY CLEAR AND COLDER. LOWS 27 TO 37. NORTHWEST
 WIND 5 TO 15 MPH.
 .SUNDAY...MOSTLY SUNNY. HIGHS IN THE UPPER 50S TO LOWER 60S.
 .SUNDAY NIGHT...CLEAR AND BREEZY. NOT AS COLD. LOWS IN THE LOWER 30S
 TO LOWER 40S.
 .MONDAY...SUNNY AND BREEZY. HIGHS IN THE MID TO UPPER 60S.
 .MONDAY NIGHT...CLEAR AND BREEZY. LOWS IN THE MID 30S TO MID 40S.
 .TUESDAY...SUNNY. HIGHS 65 TO 70.
 .TUESDAY NIGHT...CLEAR. LOWS IN THE MID 30S TO MID 40S.
 .WEDNESDAY...SUNNY. HIGHS IN THE MID 60S TO LOWER 70S.
 .WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS IN THE UPPER 30S TO UPPER 40S.
 .THURSDAY...SUNNY. HIGHS 65 TO 70.

Fig. A-21: A Zone Forecast issued midday on December 15 put in place a Wind Advisory for Imperial County. Blowing dust was expected and was observed at El Centro NAF. However, actual winds were much higher. Source: Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=201612152008>

FIGURE A-22
WIND ADVISORY FOR IMPERIAL COUNTY

National Weather Service
Watches, Warnings & Advisories

Wind Advisory

URGENT - WEATHER MESSAGE

NATIONAL WEATHER SERVICE PHOENIX AZ

146 PM MST THU DEC 15 2016

CAZ032-033-161300-

/O.NEW.KPSR.WI.Y.0016.161216T1200Z-161217T0400Z/

RIVERSIDE COUNTY/EASTERN DESERTS-**IMPERIAL COUNTY** INCLUDING

THE CITIES OF...CHIRIACO SUMMIT...DESERT CENTER...

EAGLE MOUNTAIN...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...

IMPERIAL...THE SALTON SEA

1246 PM PST THU DEC 15 2016

...**WIND ADVISORY IN EFFECT FROM 4 AM TO 8 PM PST FRIDAY**...

THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 4 AM TO 8 PM PST FRIDAY.

* **AFFECTED AREA...FAR SOUTHEAST CALIFORNIA INCLUDING IMPERIAL COUNTY** AND EASTERN RIVERSIDE COUNTY.

* TIMING...**GUSTY SOUTHWEST TO WEST WIND INCREASING LATE TONIGHT AND BECOMING STRONG BY MID MORNING FRIDAY**. STRONGEST WINDS ARE EXPECTED MID MORNING FRIDAY INTO THE EARLY EVENING BEFORE TAPERING OFF.

* WINDS...**SOUTHWEST TO WEST 25 TO 40 MPH WITH GUSTS APPROACHING 50 MPH AT TIMES, ESPECIALLY OVER RIDGE TOPS AND ACROSS THE FAR SOUTHWEST CORNER OF IMPERIAL COUNTY**.

* IMPACTS...**STRONG GUSTY WINDS WILL LEAD TO HAZARDOUS DRIVING CONDITIONS** ESPECIALLY TO HIGH PROFILE VEHICLES DRIVING ALONG EAST TO WEST ORIENTED ROADS SUCH AS INTERSTATES 8 AND 10. ADDITIONALLY, **STRONGER GUSTS WILL PRODUCE AREAS OF DENSE BLOWING DUST AND SAND** WHICH WILL RESULT IN SHARPLY REDUCED VISIBILITY AND DANGEROUS DRIVING CONDITIONS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A WIND ADVISORY MEANS THAT SUSTAINED WIND SPEEDS OF BETWEEN 30 AND 40 MPH ARE EXPECTED...OR WIND GUSTS OF BETWEEN 40 AND 58 MPH. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES. IN ADDITION...STRONG WINDS OVER DESERT AREAS COULD RESULT IN BRIEFLY LOWERED VISIBILITIES TO WELL UNDER A MILE AT TIMES IN BLOWING DUST OR BLOWING SAND. USE EXTRA CAUTION.

Fig. A-22: The Wind Advisory included in the Zone Forecast issued earlier was formalized by the NWS Watches, Warnings & Advisories alerts. Source: NWS Phoenix; http://forecast.weather.gov/showsigwx.php?warnzone=CAZ033&warncounty=CAC025&firewxzone=CAZ232&local_place1=Imperial%20CA&product1=Wind+...

FIGURE A-23
WIND ADVISORY FOR IMPERIAL COUNTY

Message: NOAA-NWS-ALERTS-
CA125626120CF8.WindAdvisory.1256262E0E80CA.PSRNPWPSR.ac66a65723e395ffc8e964d5adba8ce6
from w-nws.webmaster@noaa.gov

Sent: 12:46 PST on 12-15-2016

Effective: 12:46 PST on 12-15-2016

Expires: 20:00 PST on 12-16-2016

Event: Wind Advisory

Alert:

...WIND ADVISORY IN EFFECT FROM 4 AM TO 8 PM PST FRIDAY...

THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 4 AM TO 8 PM PST FRIDAY.

* AFFECTED AREA...FAR SOUTHEAST CALIFORNIA INCLUDING IMPERIAL COUNTY AND EASTERN RIVERSIDE COUNTY.

* TIMING...GUSTY SOUTHWEST TO WEST WIND INCREASING LATE TONIGHT AND BECOMING STRONG BY MID MORNING FRIDAY. STRONGEST WINDS ARE EXPECTED MID MORNING FRIDAY INTO THE EARLY EVENING BEFORE TAPERING OFF.

* WINDS...SOUTHWEST TO WEST 25 TO 40 MPH WITH GUSTS APPROACHING 50 MPH AT TIMES, ESPECIALLY OVER RIDGE TOPS AND ACROSS THE FAR SOUTHWEST CORNER OF IMPERIAL COUNTY.

* IMPACTS...STRONG GUSTY WINDS WILL LEAD TO HAZARDOUS DRIVING CONDITIONS ESPECIALLY TO HIGH PROFILE VEHICLES DRIVING ALONG EAST TO WEST ORIENTED ROADS SUCH AS INTERSTATES 8 AND 10. ADDITIONALLY, STRONGER GUSTS WILL PRODUCE AREAS OF DENSE BLOWING DUST AND SAND WHICH WILL RESULT IN SHARPLY REDUCED VISIBILITY AND DANGEROUS DRIVING CONDITIONS.

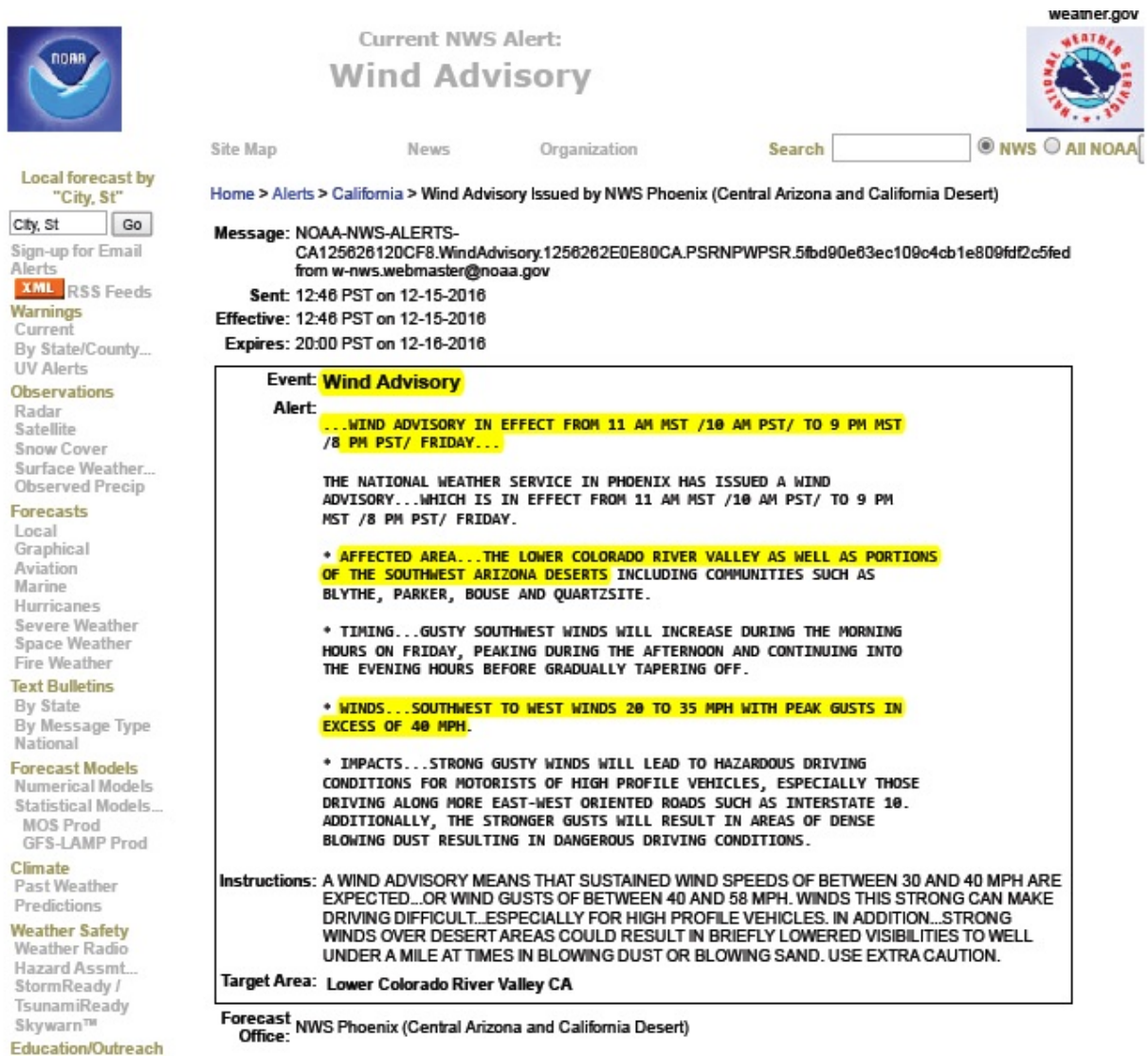
Instructions: A WIND ADVISORY MEANS THAT SUSTAINED WIND SPEEDS OF BETWEEN 30 AND 40 MPH ARE EXPECTED...OR WIND GUSTS OF BETWEEN 40 AND 58 MPH. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES. IN ADDITION...STRONG WINDS OVER DESERT AREAS COULD RESULT IN BRIEFLY LOWERED VISIBILITIES TO WELL UNDER A MILE AT TIMES IN BLOWING DUST OR BLOWING SAND. USE EXTRA CAUTION.

Target Area: Imperial County
Riverside County, Eastern Deserts

Forecast Office: NWS Phoenix (Central Arizona and California Desert)

Fig. A-23: A Wind Advisory for Imperial County at 12:46 PST on December 15 was sent through NOAA's NWS Alerts. Source: NWS Phoenix office.

FIGURE A-24 WIND ADVISORY FOR IMPERIAL COUNTY



Current NWS Alert:
Wind Advisory

Site Map News Organization Search ☒ NWS ☐ All NOAA

Home > Alerts > California > Wind Advisory Issued by NWS Phoenix (Central Arizona and California Desert)

Message: NOAA-NWS-ALERTS-CA125626120CF8.WindAdvisory.1256262E0E80CA.PSRNPWPSR.5fbd90e63ec109c4cb1e809fdf2c5fed
from w-nws.webmaster@noaa.gov

Sent: 12:46 PST on 12-15-2016
Effective: 12:46 PST on 12-15-2016
Expires: 20:00 PST on 12-16-2016

Event: **Wind Advisory**

Alert:
...WIND ADVISORY IN EFFECT FROM 11 AM MST /10 AM PST/ TO 9 PM MST /8 PM PST/ FRIDAY...

THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 11 AM MST /10 AM PST/ TO 9 PM MST /8 PM PST/ FRIDAY.

- * **AFFECTED AREA...**THE LOWER COLORADO RIVER VALLEY AS WELL AS PORTIONS OF THE SOUTHWEST ARIZONA DESERTS INCLUDING COMMUNITIES SUCH AS BLYTHE, PARKER, BOUSE AND QUARTZSITE.
- * **TIMING...**GUSTY SOUTHWEST WINDS WILL INCREASE DURING THE MORNING HOURS ON FRIDAY, PEAKING DURING THE AFTERNOON AND CONTINUING INTO THE EVENING HOURS BEFORE GRADUALLY TAPERING OFF.
- * **WINDS...**SOUTHWEST TO WEST WINDS 20 TO 35 MPH WITH PEAK GUSTS IN EXCESS OF 40 MPH.
- * **IMPACTS...**STRONG GUSTY WINDS WILL LEAD TO HAZARDOUS DRIVING CONDITIONS FOR MOTORISTS OF HIGH PROFILE VEHICLES, ESPECIALLY THOSE DRIVING ALONG MORE EAST-WEST ORIENTED ROADS SUCH AS INTERSTATE 10. ADDITIONALLY, THE STRONGER GUSTS WILL RESULT IN AREAS OF DENSE BLOWING DUST RESULTING IN DANGEROUS DRIVING CONDITIONS.

Instructions: A WIND ADVISORY MEANS THAT SUSTAINED WIND SPEEDS OF BETWEEN 30 AND 40 MPH ARE EXPECTED...OR WIND GUSTS OF BETWEEN 40 AND 58 MPH. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES. IN ADDITION...STRONG WINDS OVER DESERT AREAS COULD RESULT IN BRIEFLY LOWERED VISIBILITIES TO WELL UNDER A MILE AT TIMES IN BLOWING DUST OR BLOWING SAND. USE EXTRA CAUTION.

Target Area: Lower Colorado River Valley CA

Forecast Office: NWS Phoenix (Central Arizona and California Desert)

Fig. A-24: A Wind Advisory for the lower Colorado River valley was issued at 12:46 PST on December 15. This supports the regional nature of the wind event. Source: NWS Phoenix office;

<https://alerts.weather.gov/cap/wwacapget.php?x=CA125626120CF8.WindAdvisory.1256262E0E80CA.PSRNPWPSR.5fbd90e63ec109c4cb1e809fdf2c5fed>.

FIGURE A-25
A COLD FRONT BRINGS STRONG USTY SOUTHWEST WINDS



Fig. A-25: Strong gusty winds were set to strike the region ahead of a passing cold front.
 Source: NWS Phoenix office.

FIGURE A-26
WINDS STRENGTHEN AS STORM MOVES IN

Area Forecast Discussion

National Weather Service San Diego CA

246 PM PST Thu Dec 15 2016

...**HIGH WIND WARNING FOR THE MOUNTAIN RIDGE TOPS AND DESERTS...**

...FLASH FLOOD WATCH FOR THE SAN BERNARDINO COUNTY MOUNTAINS...

.SYNOPSIS...

A Pacific storm will move across Southern California overnight and Friday, bringing widespread rain along with strong winds in the mountains and deserts. Cool and dry weather will arrive behind the storm this weekend with brisk offshore winds. Fair and only slightly warmer next week with offshore flow.

.DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...

SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

The Pacific storm is nicely seen on water vapor imagery off the California coast centered at about 31N 129W. A plume of moisture, an atmospheric river, lies ahead of the storm and will move across Southern California overnight through Friday morning before shifting to Southeast of the area late in the day Friday. Strengthening West-Southwest wind fields, along with the increasing moisture to some 200-350% of average, will lead to an efficient upslope precip event.

This will be a relatively warm storm with high snow levels, so resort locales are forecast to receive an inch or less. However, just the highest peaks of San Geronio and San Jacinto could see significant snowfall.

Winds are strengthening and we are still looking at strong winds for the mountain ridge tops to parts of the deserts. A High Wind Warning is in effect for these locales through Friday evening. WRF continues to show a mountain wave surfacing and impacting portions of the Coachella Valley, especially from Palm Springs to Palm Desert after sunrise through noon on Friday. These can be

difficult to forecast, but it has been consistent so gusts to 60 mph are possible there with the most likely time after sunrise through noon on Friday. For the metropolitan areas...gusts look to average 20-30 mph.

From previous forecast...

Wind flow turns offshore early Saturday for a rapid clear out.

Fig. A-26: Strong gusty winds strengthened as the storm moved in. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDSGX&e=201612152246>.




FIGURE A-27
STRONG PACIFIC TROUGH MOVES OVER WESTERN US
GUSTY WINDS ACROSS SE CALIFORNIA AHEAD OF COLD FRONT

Get Local Forecast for:

Enter location

GO

Search Help

XML RSS Feeds

Current Hazards

- Outlooks
- Submit Report
- Local Storm Reports

Current Conditions

- Observations
- Radar
- Satellite
- Precipitation
- Rainfall Reports
- NOAA Weather Radio

Forecasts

- Forecast Discussion
- Local Area
- Activity Planner
- Aviation Weather
- Fire Weather
- Severe Weather
- Hurricane Center
- User Defined Area
- Travel
- Air Quality
- GIS

Hydrology

- Rivers and Lakes
- CBRFC

Climate

- Local
- National
- Drought
- More...
- Climate portal

Weather Safety


- Preparedness
- Weather Radio
- SkyWarn™
- Heat Safety
- Monsoon Safety

Additional Info

- Items of Interest
- Other Useful Links
- Education Resources
- COOP Observer
- Our Office
- Four Peaks Post
- NWS News

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Area Forecast Discussion

• Go Back • Print Friendly • Version: Latest Older Jump To: ▼ • Font: A A A A •

• Turn Dictionary Off • Product FAQ • *Active Weather Story*

FXUS65 KPSR 152151
AFDPSR

Area Forecast Discussion
National Weather Service Phoenix AZ
250 PM MST Thu Dec 15 2016

.SYNOPSIS...

A change toward unsettled and cooler weather will develop Friday through early Saturday, with a chance of rain mainly across portions of southwest and south central Arizona. **Gusty winds will also develop in southeast California and the Colorado River Valley Friday afternoon, ahead of a cold front.** Clearing skies with slightly below normal temperatures will settle over the region Sunday through early next week.

&&

.DISCUSSION...

Tonight through Saturday...

A low amplitude high pressure ridge over the region will weaken quickly this evening as a fairly strong and large Pacific trof moves into the western states. Again due to a merging jetstreams, northern and southern branches just before making landfall this evening, considerable low level moisture from the southern branch will heavily flow into our portions of southwest and south central AZ later tonight through Friday late evening.

A cold front is forecast to move into northwest AZ by early Friday morning, then slowly work south into AZ, and finally through Phoenix by evening. Important though, during the interim Friday, a plume of high boundary layer moisture, and strong low level wind enters southwest/south central AZ ahead of the front. Forecast 850 mb dewpoints in the boundary layer are on the very high side for the cold season (near 8 deg C and considered summer monsoonish). Modeled soundings for southwest and south central AZ indicate higher boundary layer mixing ratios lift into lower saturation mixing ratios, due to strong 35-45 mph 850 mb winds, enough for ragged low cloud ceilings and periods of light rain. We need help from the moisture laden boundary layer since most atmospheric dynamics will stay in northern AZ. Low level wind orientation is somewhat westerly, so upslope conditions will not be maximized, except for the north/south oriented mountain ranges in southern Gila County late Friday afternoon and night.

Additionally...strong low level winds developing in southeast AZ and the Colorado River Valley on Friday, and approaching 40 mph, warrant the issuance of a wind advisory.

By late Friday night and Saturday morning lingering showers will continue in the area from Phoenix north and east, tapering off quickly by Saturday afternoon. Since the low level moisture plume is somewhat subtropical in nature, snow levels in our forecast area will remain fairly high Friday night, but lowering to around 4300 feet early Saturday afternoon, but most moisture and the threat of rain will be nearly dissipated. Otherwise clearing, breezy and colder Saturday.

Fig. A-27: A strong Pacific trough brought strong winds to southeast California. Source: NWS Phoenix.

FIGURE A-28
HIGH WIND WARNING REMAINS IN EFFECT FOR SAN DIEGO DESERTS

CAZ062-161400-
 SAN DIEGO COUNTY DESERTS INCLUDING
 THE CITY OF...BORREGO SPRINGS
 255 PM PST THU DEC 15 2016
 ...HIGH WIND WARNING IN EFFECT UNTIL 8 PM PST FRIDAY...
 .TONIGHT...MOSTLY CLOUDY WITH A CHANCE OF RAIN. LOWS 50 TO 55.
 AREAS OF WINDS WEST 15 TO 20 MPH. GUSTS TO 30 MPH...BECOMING
 35 MPH OVERNIGHT. CHANCE OF MEASURABLE PRECIPITATION 50 PERCENT.
 .FRIDAY...PARTLY CLOUDY WITH A CHANCE OF RAIN. HIGHS 70 TO 75.
 AREAS OF WINDS SOUTHWEST 25 TO 35 MPH WITH GUSTS TO 45 MPH...
 BECOMING WEST 35 TO 45 MPH WITH GUSTS TO 70 MPH IN THE AFTERNOON.
 CHANCE OF MEASURABLE PRECIPITATION 50 PERCENT.
 .FRIDAY NIGHT...PARTLY CLOUDY IN THE EVENING...BECOMING MOSTLY
 CLEAR. COLDER. LOWS 38 TO 43. AREAS OF WINDS WEST 30 TO 40 MPH
 WITH GUSTS TO 60 MPH...BECOMING 15 TO 25 MPH WITH GUSTS TO 45 MPH
 OVERNIGHT.
 .SATURDAY...MOSTLY SUNNY. HIGHS 60 TO 65. AREAS OF WINDS WEST
 15 MPH WITH GUSTS TO 25 MPH BECOMING SOUTH 15 TO 25 MPH WITH
 GUSTS TO 35 MPH IN THE AFTERNOON.
 .SATURDAY NIGHT...MOSTLY CLEAR. LOWS 35 TO 40. LIGHT WINDS.
 .SUNDAY...MOSTLY SUNNY. HIGHS 59 TO 64.
 .SUNDAY NIGHT...MOSTLY CLEAR. LOWS 38 TO 44.
 .MONDAY...MOSTLY SUNNY. HIGHS 63 TO 68.
 .MONDAY NIGHT...MOSTLY CLEAR. LOWS 40 TO 47.
 .TUESDAY...MOSTLY SUNNY. HIGHS 65 TO 70.
 .TUESDAY NIGHT...MOSTLY CLEAR. LOWS 42 TO 48.
 .WEDNESDAY...MOSTLY SUNNY. HIGHS 67 TO 72.
 .WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS 42 TO 48.
 .THURSDAY...MOSTLY SUNNY. HIGHS AROUND 69.

Fig. A-28: A High Wind Warning remained in effect for the San Diego deserts immediately upstream of Imperial County. Source: Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPSGX&e=201612152255>.

FIGURE A-29

BLOWING DUST & SAND ALERT FOR LOWER DESERTS

The screenshot shows the National Weather Service Forecast Office San Diego, CA website. The header includes the NOAA logo, the text "National Weather Service Forecast Office San Diego, CA", and a search bar. Below the header, there are links for "Home", "News", "Organization", "FAQ", "Share", and "Search". A "Get Local Forecast for:" section includes a "Enter location" field and a "Search" button. A sidebar on the left lists various services: "Current Hazards", "Current Conditions", "Forecasts", "Hydrology", "Climate", "Weather Safety", and "Additional Info". The main content area is titled "Area Forecast Discussion" and includes a "Go Back" link, a "Print Friendly" link, and a "Version: Latest Older" dropdown. The discussion text is as follows:

FXUS66 KSGX 160001 AAA
AFDSGX

Area Forecast Discussion
National Weather Service San Diego CA
400 PM PST Thu Dec 15 2016

...HIGH WIND WARNING FOR THE MOUNTAIN RIDGE TOPS AND DESERTS...
...FLASH FLOOD WATCH FOR THE SAN BERNARDINO COUNTY MOUNTAINS...

...QUICK UPDATE...
Just sent an update to add blowing dust & sand to the lower deserts for Friday afternoon when the greatest potential for high winds will be and the pops low. No other changes to the forecast for now.

##

...SYNOPSIS...
A Pacific storm will move across Southern California overnight and Friday, bringing widespread rain along with strong winds in the mountains and deserts. Cool and dry weather will arrive behind the storm this weekend with brisk offshore winds. Fair and only slightly warmer next week with offshore flow.

##

...DISCUSSION...FOR EXTREME SOUTHWESTERN CALIFORNIA INCLUDING ORANGE...
SAN DIEGO...WESTERN RIVERSIDE AND SOUTHWESTERN SAN BERNARDINO COUNTIES...

The Pacific storm is nicely seen on water vapor imagery off the California coast centered at about 31N 129W. A plume of moisture, an atmospheric river, lies ahead of the storm and will move across Southern California overnight through Friday morning before shifting to Southeast of the area late in the day Friday. Strengthening West-Southwest wind fields, along with the increasing moisture to some 200-350% of average, will lead to an efficient upslope precip event.

Rain will increase this evening. Seeing some radar returns, mostly mid level moisture increasing. Expecting showers to arrive in the OC in the next couple of hours, spreading/developing east and south through the evening. Intensity will pick up overnight, especially in the upslope-favored locales with 1"/hr rates possible. The Friday morning commute looks to be extra slow with rain-slicked roads expected along with reduced visibility due to the rain and spray from traffic.

Hi-res models continue bullish on precip amounts, so have trended amounts up for the coastal mountain slopes with amounts now over 4" forecast for the San Bernardino County mountains as well as the San Jacintos of Riverside. Even the Santa Anas and northern San Diego County mountains look to receive 2.5-3.5". Metropolitan locales continue to look much less...with rain amounts of 0.50-1.00" forecast...similar to the previous forecasts. The deserts look to average less than a quarter of an inch. Should note that the hi-res NAM-based WRF shows maxima of 6-7" in the San Bernardinos while the GFS-based WRF shows maxima there of just over 5", so if those models verify, then max amounts could be higher than currently forecast. However, sometimes WRF has a high bias, so believe we have a solid QPF forecast.

This will be a relatively warm storm with high snow levels, so resort locales are forecast to receive an inch or less. However, just the highest peaks of San Geronio and San Jacinto could see significant snowfall.

Fig. A-29: A blowing dust and sand alert was issued for the lower deserts due to the potential for high winds the afternoon of December 16. Source: NWS San Diego; http://www.wrh.noaa.gov/total_forecast/getprod.php?prod=XXXAFDSGX&wfo=SGX.

FIGURE A-30
HIGH WIND WARNING REMAINS IN EFFECT FOR SAN DIEGO DESERTS

SGXCAZ062

```
CAZ062-161515-  
SAN DIEGO COUNTY DESERTS-  
INCLUDING THE CITY OF...BORREGO SPRINGS  
405 PM PST THU DEC 15 2016  
  
...HIGH WIND WARNING IN EFFECT UNTIL 8 PM PST FRIDAY...  
  
.TONIGHT...MOSTLY CLOUDY WITH A SLIGHT CHANCE OF RAIN. LOWS 50 TO  
55. AREAS OF WINDS WEST 15 TO 20 MPH. GUSTS TO 30 MPH...BECOMING  
35 MPH OVERNIGHT. CHANCE OF MEASURABLE PRECIPITATION 20 PERCENT.  
.FRIDAY...PARTLY CLOUDY WITH A CHANCE OF RAIN. AREAS OF BLOWING  
SAND AND BLOWING DUST. HIGHS 70 TO 75. AREAS OF WINDS SOUTHWEST  
25 TO 35 MPH WITH GUSTS TO 45 MPH...BECOMING WEST 35 TO 45 MPH  
WITH GUSTS TO 70 MPH IN THE AFTERNOON. CHANCE OF MEASURABLE  
PRECIPITATION 50 PERCENT.  
.FRIDAY NIGHT...PARTLY CLOUDY IN THE EVENING...BECOMING MOSTLY  
CLEAR. AREAS OF BLOWING SAND AND BLOWING DUST IN THE EVENING.  
COLDER. LOWS 38 TO 43. AREAS OF WINDS WEST 30 TO 40 MPH WITH  
GUSTS TO 60 MPH...BECOMING 15 TO 25 MPH WITH GUSTS TO 45 MPH  
OVERNIGHT.  
.SATURDAY...MOSTLY SUNNY. HIGHS 60 TO 65. AREAS OF WINDS WEST  
15 MPH WITH GUSTS TO 25 MPH BECOMING SOUTH 15 TO 25 MPH WITH  
GUSTS TO 35 MPH IN THE AFTERNOON.  
.SATURDAY NIGHT...MOSTLY CLEAR. LOWS 35 TO 40. LIGHT WINDS.  
.SUNDAY...MOSTLY SUNNY. HIGHS 59 TO 64.  
.SUNDAY NIGHT...MOSTLY CLEAR. LOWS 38 TO 44.  
.MONDAY...MOSTLY SUNNY. HIGHS 63 TO 68.  
.MONDAY NIGHT...MOSTLY CLEAR. LOWS 40 TO 47.  
.TUESDAY...MOSTLY SUNNY. HIGHS 65 TO 70.  
.TUESDAY NIGHT...MOSTLY CLEAR. LOWS 42 TO 48.  
.WEDNESDAY...MOSTLY SUNNY. HIGHS 67 TO 72.  
.WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS 42 TO 48.  
.THURSDAY...MOSTLY SUNNY. HIGHS AROUND 69.
```

Fig. A-30: A High Wind Warning remained in effect for the San Diego deserts a day before the storm. Source: NWS San Diego;
http://www.wrh.noaa.gov/sgx/display_zone.php?sid=SGX&zone=CAZ062.

FIGURE A-31
GUSTY WINDS AHEAD OF A COLD FRONT

Area Forecast Discussion

National Weather Service Phoenix AZ

946 PM MST Thu Dec 15 2016

.SYNOPSIS...

A change toward unsettled and cooler weather will develop Friday through early Saturday, with a chance of rain mainly across portions of southwest and south central Arizona. **Gusty winds will also develop in southeast California and the Colorado River Valley Friday afternoon, ahead of a cold front.** Clearing skies with slightly below normal temperatures will settle over the region Sunday through early next week.

.DISCUSSION...

Band of isolated-scattered light showers/sprinkles over western Maricopa County and eastern Yuma County as of 0430Z will continue to fill in as it moves eastward over Phoenix metro. Both hi-res and larger scale models are indicating that this band will be largely over with for metro Phoenix by 12Z but a short wave on it's heels will keep a precip threat going Friday morning. There will likely be a lull for at least part of the day Friday before the main upper trough moves in and brings another band of precip through in the very late afternoon and evening. Could even see a stray thunderstorm with it. Strong winds out west still look good but it will mainly be in the afternoon and evening. Made some adjustments to PoP forecasts to reflect current trends.

Fig. A-31: Gusty winds across southeast California were expected ahead of a cold front moving through the region. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201612160446>.

FIGURE A-32
IMPERIAL COUNTY WIND ADVISORY REMAINS IN EFFECT

CAZ032-033-162330-/O.CON.KPSR.WI.Y.0016.161216T1200Z-161217T0400Z/
 RIVERSIDE COUNTY/EASTERN DESERTS-IMPERIAL COUNTYINCLUDING THE CITIES
 OF...CHIRIACO SUMMIT...DESERT CENTER...
 EAGLE MOUNTAIN...**BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...**
IMPERIAL...THE SALTON SEA
123 AM PST FRI DEC 16 2016
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM PST THIS EVENING...
 * AFFECTED AREA...FAR SOUTHEAST CALIFORNIA INCLUDING IMPERIAL
 COUNTY AND EASTERN RIVERSIDE COUNTY.
 * TIMING...GUSTY SOUTHWEST TO WEST WIND CONTINUE TO INCREASE AND
 BECOMING STRONG BY MID MORNING FRIDAY. STRONGEST WINDS ARE EXPECTED
 MID MORNING FRIDAY INTO THE EARLY EVENING BEFORE TAPERING OFF
 FRIDAY NIGHT.
 * WINDS...**SOUTHWEST TO WEST 25 TO 40 MPH WITH GUSTS APPROACHING**
50 MPH AT TIMES... ESPECIALLY OVER RIDGE TOPS AND ACROSS THE
 FAR SOUTHWEST CORNER OF IMPERIAL COUNTY.
 * IMPACTS...STRONG GUSTY WINDS WILL LEAD TO HAZARDOUS DRIVING
 CONDITIONS ESPECIALLY TO HIGH PROFILE VEHICLES DRIVING ALONG
 EAST TO WEST ORIENTED ROADS SUCH AS INTERSTATES 8 AND 10.
 ADDITIONALLY... **STRONGER GUSTS WILL PRODUCE AREAS OF DENSE**
BLOWING DUST AND SAND WHICH WILL RESULT IN SHARPLY REDUCED
 VISIBILITY AND DANGEROUS DRIVING CONDITIONS.
 PRECAUTIONARY/PREPAREDNESS ACTIONS...
 A WIND ADVISORY MEANS THAT SUSTAINED WIND SPEEDS OF BETWEEN
 30 AND 40 MPH ARE EXPECTED...OR WIND GUSTS OF BETWEEN 40 AND
 58 MPH. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY
 FOR HIGH PROFILE VEHICLES. IN ADDITION...STRONG WINDS OVER DESERT
 AREAS COULD RESULT IN BRIEFLY LOWERED VISIBILITIES TO WELL UNDER
 A MILE AT TIMES IN BLOWING DUST OR BLOWING SAND. USE EXTRA
 CAUTION.

Fig. A-32: On December 16 the Wind Advisory remained in effect. Wind Advisories were also issued for areas from Joshua Tree National Park southward through the Lower Colorado River Valley. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=NPWPSR&e=201612160923>.

FIGURE A-33
BLOWING SAND AND DUST FOR SAN DIEGO COUNTY DESERTS

CAZ062-162230-
 SAN DIEGO COUNTY DESERTS INCLUDING
 THE CITY OF...BORREGO SPRINGS
 221 AM PST FRI DEC 16 2016
 ...HIGH WIND WARNING IN EFFECT UNTIL 8 PM PST THIS EVENING...
 .TODAY...PARTLY CLOUDY. CHANCE OF SHOWERS IN THE MORNING...THEN
 SLIGHT CHANCE OF SHOWERS IN THE AFTERNOON. AREAS OF BLOWING SAND
 AND BLOWING DUST IN THE AFTERNOON. LOCAL VISIBILITY ONE QUARTER
 MILE OR LESS AT TIMES IN THE AFTERNOON. HIGHS 70 TO 75. AREAS OF
 WINDS WEST 40 TO 50 MPH. GUSTS TO 50 MPH...BECOMING 75 MPH IN THE
 AFTERNOON. CHANCE OF MEASURABLE PRECIPITATION 50 PERCENT.
 .TONIGHT...MOSTLY CLEAR. AREAS OF BLOWING SAND AND BLOWING DUST.
 LOCAL VISIBILITY ONE QUARTER MILE OR LESS AT TIMES. COLDER. LOWS
 37 TO 43. AREAS OF WINDS WEST 40 TO 50 MPH WITH GUSTS TO 70 MPH
 BECOMING NORTHWEST 20 TO 30 MPH WITH GUSTS TO 45 MPH OVERNIGHT.
 .SATURDAY...SUNNY. HIGHS 59 TO 64. AREAS OF WINDS WEST 15 TO
 20 MPH WITH GUSTS TO 30 MPH IN THE MORNING BECOMING LIGHT.
 .SATURDAY NIGHT...MOSTLY CLEAR. LOWS 35 TO 40. LIGHT WINDS.
 .SUNDAY...MOSTLY SUNNY. HIGHS 61 TO 66. LIGHT WINDS.
 .SUNDAY NIGHT...MOSTLY CLEAR. LOWS 37 TO 43.
 .MONDAY...MOSTLY SUNNY. HIGHS 63 TO 68.
 .MONDAY NIGHT...CLEAR. LOWS 40 TO 45.
 .TUESDAY...MOSTLY SUNNY. HIGHS 67 TO 72.
 .TUESDAY NIGHT...MOSTLY CLEAR. LOWS 43 TO 49.
 .WEDNESDAY...MOSTLY SUNNY. HIGHS 68 TO 73.
 .WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS 41 TO 47.
 .THURSDAY...MOSTLY SUNNY IN THE MORNING...BECOMING PARTLY CLOUDY.
 HIGHS 69 TO 74.

Fig. A-33: On December 16 blowing sand and dust along with winds up to 50 mph and gusts to 75 mph were forecasted for the San Diego County deserts. This area was immediately upstream from Imperial County during the wind event. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPSGX&e=201612161021>.

FIGURE A-34
BLOWING SAND AND DUST FOR SE CALIFORNIA DESERTS

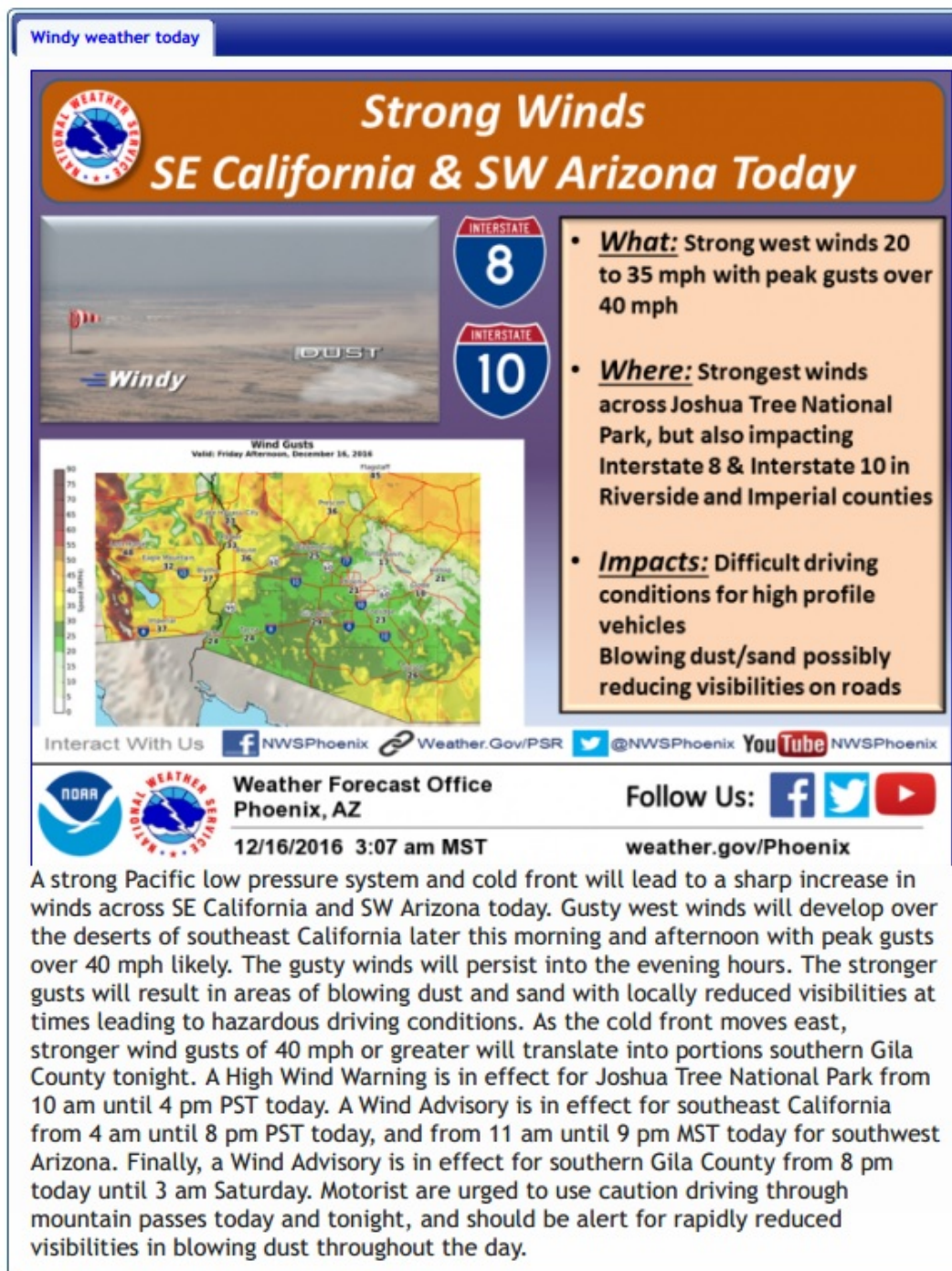


Fig. A-34: A strong Pacific cold front was forecasted to bring high winds and blowing dust and sand to southeast California. Source: NWS Phoenix.

FIGURE A-35
PACIFIC STORM TO BRING STRONG WINDS TO MOUNTAINS AND DESERTS

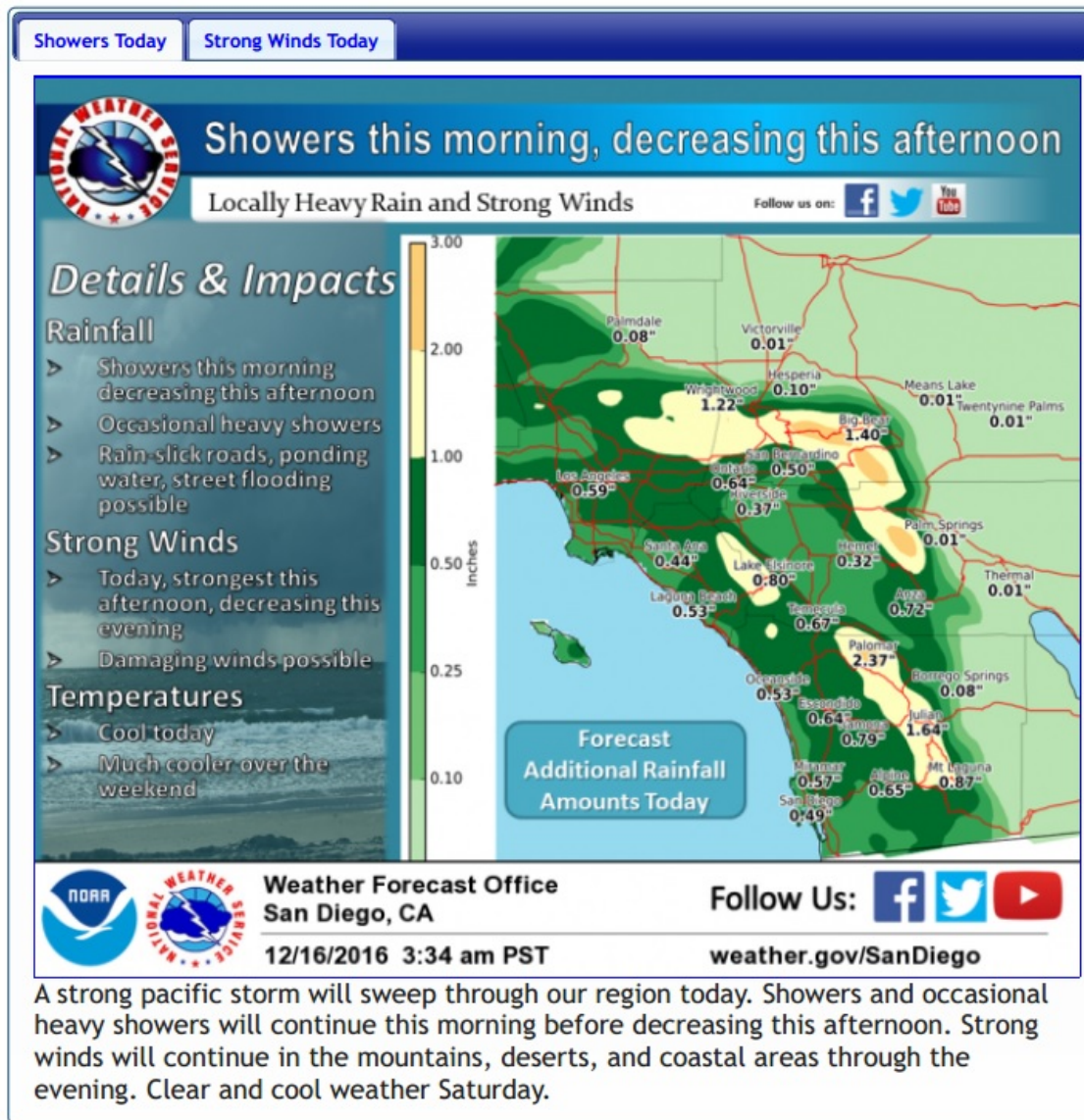


Fig. A-35: A strong Pacific cold front was forecasted to bring high winds to the mountains and deserts of southeast California. Source: NWS Phoenix.

FIGURE A-36
PACIFIC STORM TO BRING STRONG WINDS TO MOUNTAINS AND DESERTS

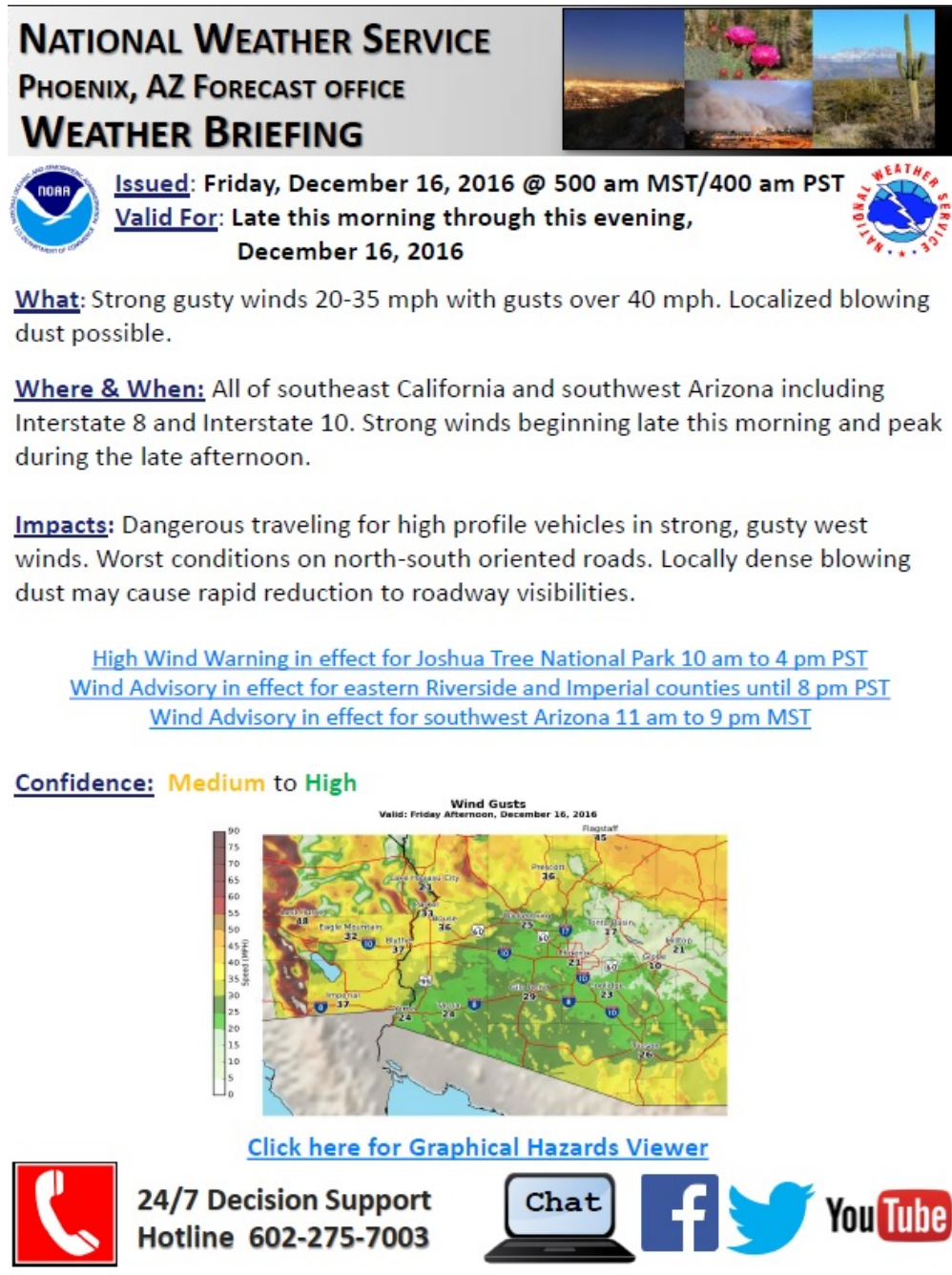


Fig. A-36: The ICAPCD posted on its website a Weather Briefing issued by the NWS Phoenix office advising the public of blowing dust due to high winds on December 16. Source: NWS Phoenix.

FIGURE A-37
WIND ADVISORY REMAINS IN EFFECT FOR IMPERIAL COUNTY
AREAS OF BLOWING DUST EXPECTED

CAZ033-162300-
 IMPERIAL COUNTY INCLUDING
 THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...
 IMPERIAL...THE SALTON SEA
 710 AM PST FRI DEC 16 2016
 ...WIND ADVISORY IN EFFECT UNTIL 8 PM PST THIS EVENING...
 .TODAY...PARTLY CLOUDY. A SLIGHT CHANCE OF SHOWERS IN THE MORNING.
 AREAS OF BLOWING DUST IN THE AFTERNOON. WINDY. HIGHS 70 TO 75.
 SOUTHWEST WIND 20 TO 30 MPH. GUSTS UP TO 40 MPH. CHANCE OF MEASURABLE
 RAIN 10 PERCENT.
 .TONIGHT...MOSTLY CLEAR AND WINDY. AREAS OF BLOWING DUST IN THE
 EVENING. MUCH COLDER. LOWS 38 TO 48. WEST WIND 20 TO 30 MPH. GUSTS UP
 TO 40 MPH.
 .SATURDAY...SUNNY...BREEZY AND MUCH COOLER. HIGHS 59 TO 64. NORTH
 WIND 15 TO 25 MPH.
 .SATURDAY NIGHT...CLEAR AND COLDER. LOWS 31 TO 41. NORTHWEST WIND
 5 TO 15 MPH.
 .SUNDAY...SUNNY. HIGHS 60 TO 65. NORTH WIND 10 TO 20 MPH.
 .SUNDAY NIGHT...CLEAR. LOWS IN THE LOWER 30S TO LOWER 40S.
 .MONDAY...SUNNY. HIGHS IN THE MID TO UPPER 60S.
 .MONDAY NIGHT...CLEAR. LOWS IN THE MID 30S TO MID 40S.
 .TUESDAY...SUNNY. HIGHS 65 TO 70.
 .TUESDAY NIGHT...MOSTLY CLEAR. LOWS IN THE UPPER 30S TO UPPER 40S.
 .WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE UPPER 60S TO LOWER 70S.
 .WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS IN THE UPPER 30S TO UPPER 40S.
 .THURSDAY...MOSTLY SUNNY. HIGHS IN THE UPPER 60S TO LOWER 70S.

Fig. A-37: The Wind Advisory for Imperial County remained in effect the morning of December 16. Gusty winds up to 30mph were expected with gusts reaching 40 mph. The high winds were expected to cause areas of blowing dust. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=201612161510>.

FIGURE A-38
IMPERIAL COUNTY DOES NOT RECEIVE PRECIPITATION

Area Forecast Discussion

National Weather Service Phoenix AZ

815 AM MST Fri Dec 16 2016

.SYNOPSIS...

Somewhat cooler and much more unsettled weather will spread over the area today through Saturday morning. **Very gusty winds will develop in southeast California and far western Arizona ahead of a cold front.** Elsewhere, a few light showers will be common through central and eastern Arizona. Clearing skies with much cooler temperatures will settle into the region early next week, however temperatures will quickly moderate back to near average by the middle of the week.

.DISCUSSION...

A large Pacific trof moved ashore last night, and a number of shortwaves embedded in the merged southern branch of the jetstream raced through southern CA and AZ. Most of the precip was concentrated in south central AZ, Phoenix and vicinity, with **profound rain-shadow effects over southeast CA and the Colorado River Valley.** For example, the coastal mountain range just west of the Imperial valley picked nearly 1.30 inches overnight **while nada fell over the southeast CA deserts.**

The western portions of our forecast area, southeast CA and parts of southwest AZ will be under the rain shadow effects of a strong low level west wind. A wind advisory is still posted for this area today.

During this evolution, the low level pressure gradient will steepen across SE CA/W AZ while boundary layer mixing depths increase to near 850mb. Strong momentum transfer will occur within the well mixed boundary where 40-50kt winds will partially be tapped from the H9-H7 layer. **An assortment of wind advisories and warnings remain in effect for the western half of the CWA starting later this morning.** And while ridge tops and gap passes experience the strongest winds, very breezy conditions will be felt even into communities away from terrain features. **In addition to the typical problems for high profile vehicles, blowing dust may also become a problem on area roads adjacent to open fields.** Some stronger gusts may also be possible across ridge tops of Gila county this evening though reduced mixing and decoupling may preclude more expansive direct impacts.

Fig. A-38: Despite the copious amounts of precipitation on the west side of the mountains, Imperial County was in the rain shadow and felled to receive any precipitation. This made the already dry soils susceptible to entrainment. Source: Iowa Environmental Mesonet; AFD from NWS PSR
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDPSR&e=201612161515>.

FIGURE A-39
HIGH WINDS EXPECTED IN THE MOUNTAINS AND DESERTS

URGENT - WEATHER MESSAGE
 NATIONAL WEATHER SERVICE SAN DIEGO CA
 939 AM PST FRI DEC 16 2016
 ...**VERY STRONG WINDS IN THE MOUNTAINS AND PORTIONS OF THE DESERTS**
TODAY...
 .A PACIFIC STORM WILL MOVE ACROSS SOUTHERN CALIFORNIA TODAY.
 WINDS WILL CONTINUE VERY STRONG THROUGH THIS EVENING IN THE
 MOUNTAINS AND DESERTS BEFORE DECREASING TONIGHT. STRONG WINDS
 WILL DEVELOP ALONG THE COAST THIS AFTERNOON AND CONTINUE TONIGHT.
 WINDS WILL GRADUALLY DIMINISH TONIGHT.
 CAZ055-056-058-060-065-170400-
 /O.CON.KSGX.HW.W.0010.000000T0000Z-161217T0400Z/
 SAN BERNARDINO COUNTY MOUNTAINS-RIVERSIDE COUNTY MOUNTAINSSAN
 DIEGO COUNTY MOUNTAINS-APPLE AND LUCERNE VALLEYSSAN
 GORGONIO PASS NEAR BANNINGINCLUDING
 THE CITIES OF...CRESTLINE...LAKE ARROWHEAD...
 BIG BEAR CITY...BIG BEAR LAKE...RUNNING SPRINGS...WRIGHTWOOD...
 IDYLLWILD-PINE COVE...JULIAN...PINE VALLEY...VICTORVILLE...
 HESPERIA...APPLE VALLEY...BANNING...DESERT HOT SPRINGS
 939 AM PST FRI DEC 16 2016
 ...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM PST THIS
 EVENING...
 * WINDS...**AREAS OF WEST TO SOUTHWEST WINDS 20 TO 40 MPH. PEAK**
WIND GUSTS TO 80 MPH AT THE MOUNTAIN RIDGE TOPS AND TO AROUND
60 MPH AT ISOLATED LOCATIONS ON THE DESERT FLOOR.
 * TIMING...THROUGH THIS EVENING.
 * LOCATION...STRONGEST WINDS NEAR MOUNTAIN RIDGE TOPS AND ALONG
 THE DESERT MOUNTAIN SLOPES INTO ADJACENT DESERT AREAS.
 * VISIBILITY...MAY BE **REDUCED IN AREAS OF BLOWING DUST AND SAND IN THE DESERTS.**
 CAZ061-062-170400-
 /O.CON.KSGX.HW.W.0010.000000T0000Z-161217T0400Z/
 COACHELLA VALLEY-**SAN DIEGO COUNTY DESERTS** INCLUDING
 THE CITIES OF...INDIO...PALM SPRINGS...CATHEDRAL CITY...
 PALM DESERT...PALM DESERT COUNTRY...LA QUINTA...COACHELLA...
 BORREGO SPRINGS
 939 AM PST FRI DEC 16 2016
 ...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM PST THIS
 EVENING...
 * WINDS...**AREAS OF WEST TO SOUTHWEST WINDS 20 TO 40 MPH WITH**
ISOLATED GUSTS TO AROUND 60 MPH.
 * TIMING...THROUGH THIS EVENING.
 * LOCATION...THE COACHELLA VALLEY AND ANZA BORREGO DESERT.
 * VISIBILITY...MAY BE **REDUCED IN BLOWING DUST AND SAND.**
 * IMPACTS...STRONG WINDS CAN MAKE DRIVING DIFFICULT...ESPECIALLY
 FOR DRIVERS OF HIGH PROFILE VEHICLES AND VEHICLES TOWING
 TRAILERS. WINDS THIS STRONG MAY DOWN TREES AND POWER LINES...
 AND CAUSE PROPERTY DAMAGE.
 PRECAUTIONARY/PREPAREDNESS ACTIONS...
 A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
 OR OCCURRING. SUSTAINED WIND SPEEDS OF AT LEAST 40 MPH OR GUSTS
 OF 58 MPH OR MORE CAN LEAD TO PROPERTY DAMAGE.

Fig. A-39: Very strong winds were expected in the mountains and portions of the deserts on December 16 as the weather system moved through southeast California. Source: Iowa Environmental Mesonet; NPW from NWS SGX;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=NPWSGX&e=201612161739>.

FIGURE A-40
REDUCED AIR QUALITY FORECASTED FOR DECEMBER 16

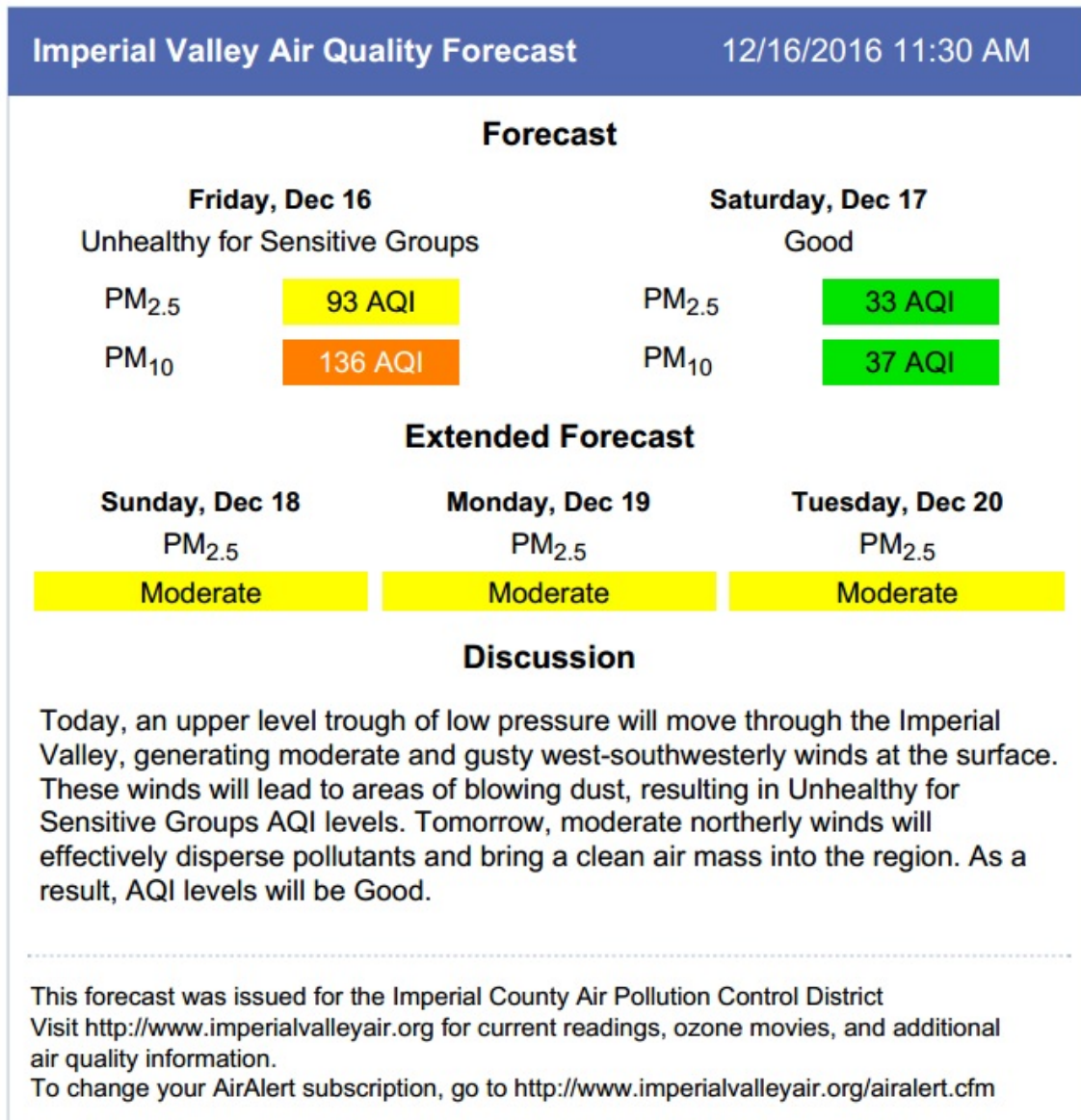


Fig. A-40: Gusty winds were forecasted to lead to blowing dust in the Imperial Valley on December 16. Source: ICAPCD Archives.

FIGURE A-41
GUSTS UP TO 75 MPH WITH BLOWING DUST AND SAND IN THE DESERTS

CAZ062-171115-
 SAN DIEGO COUNTY DESERTS INCLUDING
 THE CITY OF...BORRERO SPRINGS
 1203 PM PST FRI DEC 16 2016
 ...HIGH WIND WARNING IN EFFECT UNTIL 8 PM PST THIS EVENING...
 .REST OF TODAY...PARTLY CLOUDY WITH A SLIGHT CHANCE OF SHOWERS.
 AREAS OF BLOWING SAND AND BLOWING DUST. LOCAL VISIBILITY ONE
 QUARTER MILE OR LESS AT TIMES. HIGHS 70 TO 75. AREAS OF WINDS
 WEST 40 TO 50 MPH. GUSTS TO 65 MPH...BECOMING 75 MPH IN THE
 AFTERNOON. CHANCE OF MEASURABLE PRECIPITATION 20 PERCENT.
 .TONIGHT...MOSTLY CLEAR. AREAS OF BLOWING SAND AND BLOWING DUST.
 LOCAL VISIBILITY ONE QUARTER MILE OR LESS AT TIMES. COLDER. LOWS
 43 TO 49. AREAS OF WINDS WEST 40 TO 50 MPH WITH GUSTS TO 70 MPH
 BECOMING NORTHWEST 20 TO 30 MPH WITH GUSTS TO 45 MPH OVERNIGHT.
 .SATURDAY...SUNNY. HIGHS 59 TO 64. AREAS OF WINDS WEST 15 TO
 20 MPH WITH GUSTS TO 30 MPH IN THE MORNING BECOMING LIGHT.
 .SATURDAY NIGHT...MOSTLY CLEAR. COLDER. LOWS 31 TO 37. LIGHT
 WINDS.
 .SUNDAY...MOSTLY SUNNY. HIGHS 60 TO 65. LIGHT WINDS.
 .SUNDAY NIGHT...MOSTLY CLEAR. LOWS 35 TO 41.
 .MONDAY...MOSTLY SUNNY. HIGHS 62 TO 67.
 .MONDAY NIGHT...CLEAR. LOWS 40 TO 46.
 .TUESDAY...MOSTLY SUNNY. HIGHS 67 TO 72.
 .TUESDAY NIGHT...MOSTLY CLEAR. LOWS 43 TO 50.
 .WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 71.
 .WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS 45 TO 51.
 .THURSDAY...MOSTLY SUNNY IN THE MORNING...BECOMING PARTLY CLOUDY.

Fig. A-41: Winds up to 50 mph with gusts up to 75 mph were forecasted for the San Diego County deserts that were immediately upstream of Imperial County. Source: Iowa Environmental Mesonet;
<https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPSGX&e=201612162003>.

FIGURE A-42
WIND ADVISORY REMAINS IN EFFECT FOR IMPERIAL COUNTY INTO THE EVENING HOURS

CAZ033-171100-
 IMPERIAL COUNTY INCLUDING
 THE CITIES OF...BRAWLEY...CALEXICO...EL CENTRO...GLAMIS...
 IMPERIAL...THE SALTON SEA
 554 PM PST FRI DEC 16 2016
 ...WIND ADVISORY IN EFFECT UNTIL 8 PM PST THIS EVENING...
 .TONIGHT...MOSTLY CLEAR AND WINDY. AREAS OF BLOWING DUST IN THE
 EVENING. MUCH COOLER. LOWS 40 TO 50. WEST WIND 20 TO 35 MPH IN THE
 EVENING BECOMING NORTHWEST 15 TO 25 MPH AFTER MIDNIGHT. GUSTS UP TO
 50 MPH.
 .SATURDAY...SUNNY...WINDY AND MUCH COOLER. HIGHS 59 TO 64. NORTH WIND
 15 TO 25 MPH. GUSTS UP TO 35 MPH.
 .SATURDAY NIGHT...CLEAR AND COLDER. LOWS 30 TO 40. NORTHWEST WIND
 5 TO 15 MPH.
 .SUNDAY...SUNNY. HIGHS 59 TO 64. NORTH WIND 10 TO 20 MPH.
 .SUNDAY NIGHT...CLEAR. LOWS 32 TO 42. NORTHWEST WIND 10 TO 20 MPH.
 .MONDAY...SUNNY. HIGHS IN THE LOWER TO MID 60S.
 .MONDAY NIGHT...CLEAR. LOWS IN THE MID 30S TO MID 40S.
 .TUESDAY...SUNNY AND WARMER. HIGHS IN THE UPPER 60S TO LOWER 70S.
 .TUESDAY NIGHT...MOSTLY CLEAR. LOWS IN THE UPPER 30S TO UPPER 40S.
 .WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE UPPER 60S TO MID 70S.
 .WEDNESDAY NIGHT...MOSTLY CLEAR. LOWS IN THE UPPER 30S TO UPPER 40S.
 .THURSDAY...MOSTLY SUNNY. HIGHS IN THE UPPER 60S TO MID 70S.
 .THURSDAY NIGHT...CLEAR. LOWS IN THE UPPER 30S TO UPPER 40S.
 .FRIDAY...MOSTLY SUNNY. HIGHS IN THE UPPER 60S TO LOWER 70S.

Fig. A-42: The Wind Advisory for Imperial County was still in effect at 5:54 p.m. on December 16. Winds showed no sign of letting up. Source: Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=ZFPPSR&e=201612170154>.

FIGURE A-43 REGIONAL WIND SPEEDS

Public Information Statement

National Weather Service San Diego CA

535 AM PST Sat Dec 17 2016

...Wind Reports...

Location Speed Time/Date Elevation (ft.)

...Victor Valley - Apple Valley - Lucerne Valley - Johnson Valley...

Pinon Hills 65 MPH 1218 AM 12/15 4302

Victorville (5 N) 52 MPH 1005 PM 12/15 4650

Yucca Valley (5 W) 51 MPH 0304 AM 12/16 4302

El Mirage 46 MPH 1226 PM 12/16 2880

Hesperia (4 SW) 45 MPH 0248 PM 12/16 3580

Means Lake 44 MPH 0526 PM 12/16 2818

Victorville Airport 44 MPH 0735 PM 12/15 2884

Victorville (6 SW) 42 MPH 0602 PM 12/15 3164

Apple Valley (6 N) 42 MPH 0150 PM 12/16 3159

Hesperia (7 SW) 41 MPH 0459 AM 12/16 3979

Hesperia (4 SW) 41 MPH 1245 AM 12/17 3849

Hesperia (2 E) 36 MPH 1254 PM 12/16 3051

...Santa Ana Mountains-Including The Trabuco Ranger District of the Cleveland National Forest...

Fremont Canyon 50 MPH 0951 AM 12/16 1780

El Cariso 48 MPH 0820 AM 12/16 2733

Santiago Peak 47 MPH 1255 AM 12/17 4135

Pleasants Peak 47 MPH 0930 AM 12/16 3870

Case Springs (Camp Pendleton 40 MPH 0922 AM 12/16 2319

Silverado (3 NE) 38 MPH 0226 AM 12/16 3720

Santa Rosa Plateau 36 MPH 1154 AM 12/16 1986

...San Geronio Pass Near Banning...

Whitewater Raws (2 N) 71 MPH 0950 PM 12/15 2546

Thousand Palms (5 NNE) 45 MPH 0608 PM 12/16 1066

Cabazon 42 MPH 1214 PM 12/16 2154

...San Diego County Mountains-Including The Palomar And Descanso Ranger Districts of the Cleveland National Forest...

Volcan Mountain 70 MPH 0510 AM 12/16 5154

Boucher Hill 59 MPH 0527 AM 12/16 5440

Harrison Park 59 MPH 0830 AM 12/16 4861

Palomar Mountain (1 NNW) 57 MPH 0925 PM 12/15 5230

Descanso (8 NE) 56 MPH 0520 AM 12/16 4740

Palomar Mtn Lookout 55 MPH 1025 AM 12/16 6142

Julian (4 W) 51 MPH 1240 PM 12/16 3738

Ranchita (1 NE) 49 MPH 0507 AM 12/16 4415

Lake Cuyamaca 49 MPH 1010 PM 12/16 4779

Santa Ysabel (1 SE) 47 MPH 1220 PM 12/16 3314

Ranchita 47 MPH 0810 AM 12/16 4128

Boulevard (1 W) 47 MPH 0740 AM 12/16 3404

Julian Fire Station 46 MPH 0955 PM 12/16 4238

Julian (2 SE) 44 MPH 0410 AM 12/16 4487

Warner Springs (4 SW) 43 MPH 1200 PM 12/16 2803

5 S Julian 42 MPH 0925 PM 12/16 4637

Guatay 41 MPH 1140 PM 12/16 3892

Big Black Mountain 41 MPH 0347 AM 12/16 4055

Pine Valley (3 SSW) 40 MPH 1120 PM 12/16 4004

Julian (1 ESE) 40 MPH 1020 AM 12/16 4201

Warner Springs (4 SE) 39 MPH 1120 PM 12/16 3242

North Descanso 38 MPH 1210 AM 12/17 3377
Sill Hill 38 MPH 1020 PM 12/16 3556
Santa Ysabel (6 NW) 37 MPH 0940 PM 12/16 3349
Campo (7 N) 37 MPH 0220 PM 12/16 3212
Boulevard (8 NW) 37 MPH 1140 PM 12/16 4000
Campo 37 MPH 1245 AM 12/16 2630
Wynola West 36 MPH 1000 PM 12/16 3553
Mt Laguna (3 W) 36 MPH 0900 AM 12/16 5030
Warner Springs (3 SW) 36 MPH 1130 AM 12/16 2842
Julian (5 NW) 35 MPH 0910 PM 12/16 4284

...San Diego County Inland Valleys...

Jamul (8 SSE) 43 MPH 1214 AM 12/17 3283
Lake San Marcos (3 SE) 41 MPH 1055 AM 12/16 540
San Clemente (5 E) 40 MPH 0922 AM 12/16 810
2 WNW Fallbrook 39 MPH 1122 AM 12/16 441
Otay Mountain 39 MPH 1220 AM 12/17 3359
Roblar Canyon (Camp Pendleton 39 MPH 0222 AM 12/17 915
Mt Woodson 38 MPH 0225 AM 12/16 2850
Dye Mountain 38 MPH 1010 PM 12/16 2998
Barrett Junction (4 N) 37 MPH 0250 PM 12/16 2395
Pala (2 W) 36 MPH 1150 AM 12/16 455
North Boulder Creek 36 MPH 1020 PM 12/16 3091
Jamul (7 E) 36 MPH 1135 PM 12/16 3760
Santa Ysabel Ranch 36 MPH 1230 PM 12/16 2943
Round Potrero 35 MPH 1030 PM 12/16 2634
Rainbow (1 E) 35 MPH 1123 AM 12/16 2037
Alpine Heights (1 S) 35 MPH 0140 PM 12/16 1807

...San Diego County Deserts-Including The Anza Borrego Desert State Park...

Ocotillo Wells (4 W) 60 MPH 0751 PM 12/16 436
Julian (9 ESE) 54 MPH 0549 AM 12/16 2011
Borrego Springs (3 W) 53 MPH 1110 AM 12/16 820
Borrego Springs (2 E) 50 MPH 1040 AM 12/16 720
In Ko Pah 50 MPH 1220 PM 12/16 3221
Borrego Springs (7 SE) 48 MPH 0143 PM 12/16 587
Borrego Springs (9 S) 40 MPH 1140 AM 12/16 768
Ocotillo Wells (3 WNW) 38 MPH 0812 PM 12/16 390
Jacumba 36 MPH 0120 AM 12/16 2700

...San Diego County Coastal Areas...

Carlsbad (2 W) 49 MPH 1106 PM 12/16 364
Mission Beach 42 MPH 1149 PM 12/16 13
Silver Strand Beach 41 MPH 1144 PM 12/16 30
San Marcos 41 MPH 0614 PM 12/16 775
Del Mar 41 MPH 1123 PM 12/16 12
Camp Pendleton (6 W) 39 MPH 1122 PM 12/16 760
San Miguel 39 MPH 0350 AM 12/16 424
Point Loma Lighthouse 37 MPH 1144 PM 12/16 20
Imperial Beach (NAS) 35 MPH 1225 AM 12/17 23
North Island NAS 35 MPH 1145 PM 12/16 26
Camp Pendleton South 35 MPH 1123 PM 12/16 245
La Jolla Heights 35 MPH 1010 PM 12/16 409

...San Bernardino and Riverside County Valleys-The Inland Empire...

Temescal Valley (4 SE) 40 MPH 0844 AM 12/16 1460
Temescal 40 MPH 1241 AM 12/17 1708
Lake Mathews (1 SW) 38 MPH 1216 AM 12/17 1516
Highland Springs 35 MPH 1116 AM 12/16 2233

...San Bernardino County Mountains-Including The Mountain Top And Front Country Ranger Districts Of The San Bernardino National Forest...

Burns Canyon 89 MPH 0551 PM 12/16 6284
 Running Springs (2 NW) 57 MPH 0915 AM 12/16 6350
 Big Bear (2 E) 46 MPH 1029 AM 12/16 6790
 Wrightwood (1 W) 44 MPH 0549 PM 12/15 6371
 Big Bear Airport 44 MPH 0915 AM 12/16 6752
 Rock Camp 43 MPH 1102 AM 12/16 4900
 Fawnskin 41 MPH 1234 PM 12/16 7000
 2 W Lake Arrowhead 40 MPH 0924 PM 12/15 5495
 Converse 39 MPH 1209 PM 12/16 5618
 Big Bear Lake 39 MPH 1132 AM 12/16 6766
 Wrightwood 38 MPH 0423 AM 12/16 5994
 Mormon Rock 37 MPH 0116 PM 12/16 3300
 Big Bear (2 S) 36 MPH 0305 AM 12/16 7260
 Lake Arrowhead (1 N) 35 MPH 1056 AM 12/16 5225
 Fawnskin (2 E) 35 MPH 1134 AM 12/16 6900

...Riverside County Mountains-Including The San Jacinto Ranger District Of The San Bernardino National Forest...

Toro Peak 78 MPH 1125 PM 12/15 8690
 Pinyon Pines 53 MPH 0736 AM 12/16 4060
 Pine Cove (8 NW) 45 MPH 1201 PM 12/16 4906
 Banning (5 NNW) 39 MPH 1214 PM 12/16 3830
 Mt San Jacinto 36 MPH 0153 AM 12/17 8584

...Orange County Inland...

San Clemente Ridge 37 MPH 0810 PM 12/16 770
 Coto De Caza (3 S) 36 MPH 0951 AM 12/16 793

...Orange County Coastal...

1 W Laguna Beach 42 MPH 0832 PM 12/16 6
 San Clemente Pier (3 S) 42 MPH 1006 PM 12/16 32

...Coachella Valley-Including The Palm Springs South Coast Desert District...

Thermal Airport 58 MPH 0725 PM 12/16 -118
 Thousand Palms (5 NE) 47 MPH 0638 PM 12/16 1089
 Coachella 47 MPH 0732 PM 12/16 110
 Thousand Palms 43 MPH 0135 PM 12/16 272
 Palm Springs Airport 40 MPH 1018 PM 12/16 474
 Cathedral City (1 SW) 39 MPH 0652 PM 12/16 605

...Maritime Stations...

San Clemente Basin Buoy 43 MPH 0850 PM 12/16 0
 Mission Bay Channel 39 MPH 0915 PM 12/16 22
 Oceanside Jetty 39 MPH 1124 PM 12/16 18
 Imperial Beach Pier 38 MPH 1219 AM 12/17 40
 Pacific Beach (Crystal Pier) 36 MPH 0914 PM 12/16 15
 San Diego Broadway Pier 35 MPH 0936 PM 12/16 0

Observations are collected from a variety of sources with varying equipment and exposures. Not all data listed are considered official.

Fig. A-43: Regional Wind speeds that impacted the area during the passage of the weather system. Source: PNS from NWS SGX, Iowa Environmental Mesonet; <https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=PNSSGX&e=201612171335>.

FIGURE A-44
BLOWING DUST DETECTED OVER SOUTHEASTERN CALIFORNIA

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 0300Z December 17, 2016

DUST:

Southwestern US...

A broad area strong gusty winds affecting portions of the Southwestern US from southern California eastward to the Central and Southern Plains were responsible for quite a bit of blowing dust. A swath of moderately dense to locally thick blowing dust from a dry lake bed in Esmeralda County of west central Nevada was seen fanning out to the east and southeast. Several source regions contributed to sizable area of thin density blowing dust affecting portions of southeastern California, northwestern Baja, as well as southwestern and south central Arizona. Significant streaks of moderately dense to thick dust were visible spreading to the east and northeast from sources in northern Mexico just south of the New Mexico border. This dust affected western Texas including the El Paso region and south central to southeastern New Mexico. More thin density blowing dust moved eastward from White Sands in south central New Mexico reaching east central New Mexico and west central Texas just prior to sunset. Farther north, many streaks of thin density blowing dust were seen originating from sources in west central and northwestern Texas with this dust spreading east and reaching southwestern Oklahoma and north central Texas by sunset. Finally, an area of thin density blowing dust originated from a source in south central Colorado and spread east over southeastern Colorado toward western Kansas.

Fig. A-45: A Smoke Text Product effective through 1900 LST identified a broad area of blowing dust over the entire southwestern United States, including southern California. Source: <http://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2016L170400.html>.

FIGURE A-46
AIR QUALITY ALERT ISSUED FOR WESTMORLAND

Imperial Valley Air Quality Alert

Westmorland - 570 Cook St

Friday, December 16 - 8:00 AM
 PM10 (24-hr average) AQI reached 109 - **Unhealthy for Sensitive Groups**

PM10 AQI 101-150 People with respiratory or heart disease, the elderly, and children are the groups most at risk, especially when they are physically active. There is an increased likelihood of respiratory symptoms in sensitive individuals, and aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly. U.S. EPA cautions that "people with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion." 'Prolonged' generally means four or more hours with short rest periods. 'Heavy exertion' is that which would increase the resting breathing rate four fold or greater. You can reduce exposure to particulate material by: - Reducing the intensity and duration of your outdoor activities - Postponing outdoor activities to days when particulate levels are lower

Current Maximum AQI for Other Imperial Valley Cities

Brawley - 220 Main Street: **Moderate** (PM10)

Calexico - Ethel Street: **Moderate** (PM10)

El Centro - 9th Street: **Moderate** (PM10)

Niland - English Road: **Moderate** (PM2.5)

This notification was issued by the Imperial Valley Air Pollution Control District. Visit <http://www.imperialvalleyair.org> for current readings, ozone movies, and additional air quality information.

All observational data on this web site are not verified or validated and should be considered preliminary. From time to time error codes are included into the calculations for the AQI – for verification please contact the Air District office.

To change your AirAlert subscription, go to <http://www.imperialvalleyair.org/airalert.cfm>

For more information on how the AQI is calculated, visit [Air Now](#).

Fig. A-46: The dust lofted was so voluminous that it triggered an air quality alert to be issued for the Westmorland area at 8:00 a.m. on December 16. Source: ICAPCD Archives.

FIGURE A-47
AIR QUALITY ALERT ISSUED FOR WESTMORLAND

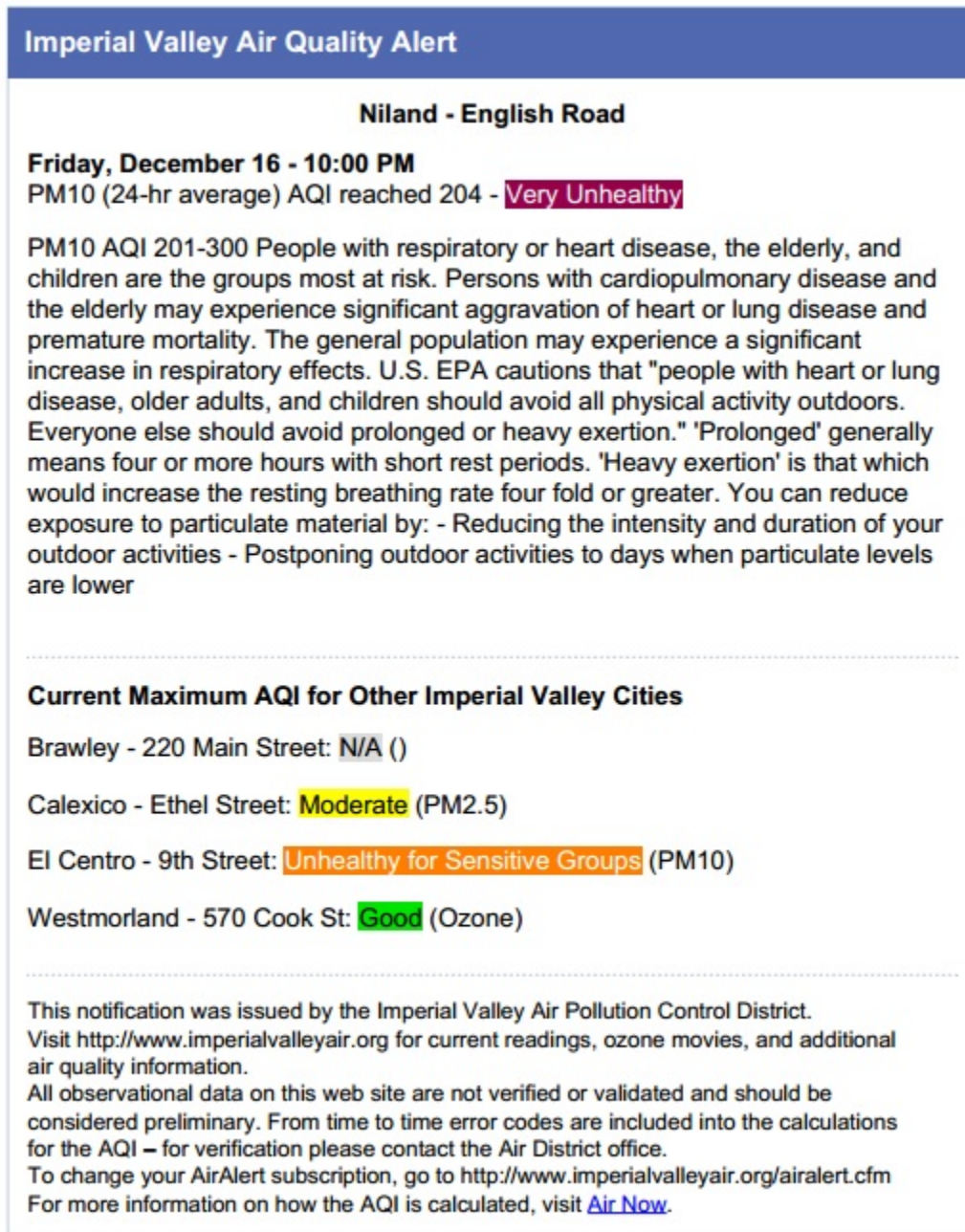


Fig. A-47: The dust lofted was so voluminous that by 10:00 p.m. on December 16 it caused Niland's air quality to drop into the Very Unhealthy range. Source: ICAPCD Archives.

**FIGURE A-48
AIR QUALITY INDEX**

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects.
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

Fig. A-48: The Air Quality Index The AQI is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. The AQI focuses on health effects you may experience within a few hours or days after breathing polluted air. EPA calculates the AQI for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health. Ground-level ozone and airborne particles are the two pollutants that pose the greatest threat to human health in this country. Source: <https://airnow.gov/index.cfm?action=aqibasics.aqi>.

FIGURE A-49
IMPERIAL COUTNY ISSUED NO BURN DAY

Imperial County Air Pollution Control District
Daily Weather and Ag. Burning Information

Date: **Friday, December 16, 2016**

Yesterday's Weather Observations at Imperial Airport (ASOS) FAA/NWS

LOCAL TIME	TEMP °F	WINDS MILES PER HOUR	VISIBILITY MILES
7 AM	52	SW-5	10
8 AM	54	CALM	10
9 AM	59	CALM	10
10 AM	63	CALM	10
11 AM	66	CALM	10
NOON	68	ESE-3	10
1 PM	69	ESE-3	10
2 PM	70	CALM	10
3 PM	71	CALM	10
4 PM	70	WSW-3	10
5 PM	68	CALM	10
6 PM	68	NE-3	10
7 PM	66	CALM	10
Max. Temperature yesterday was		71	degrees

Today's Mt. Signal Visibility at 7:30 AM **clear** NKX 12Z 500 MB Height

1Y7 12Z 500 MB Height

Forecasts

High Today **70-75**

Local Forecast
(Issued 8 AM Local)

Computer Forecast
(RUC 40KM 12Z)

Est. Time Mixing Height reaches 3000 feet

Does not

10:00 a.m

Forecast of Maximum Mixing Height

<3,000

feet

3,975

feet

Forecast for Morning surface winds

SW 20-30

mph

SW 20-30

mph

Forecast for afternoon surface winds

SW 20-30

mph

SW 20-30

mph

Forecast for evening surface winds

SW 20-30

mph

Forecast 10 AM - 3 PM transport winds

SW 20-30

mph

Comments/Complaints: **GUSTS UP TO 40 MPH**

Burn Hours ARB No Burn Day District called No Burn Day **XX**

Total actually burned today acres Crops burned

IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT 2011

Int **FG**

Fig. A-49: A copy of the Imperial County Air Pollution Control District official record of conditions as they existed on December 16, 2016. A No Burn Day was declared. Source: ICAPCD Archives

FIGURE A-50
IMPERIAL COUNTY AFFIDAVIT 30 DAY PUBLIC NOTICE

AFFIDAVIT OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA

County of Imperial

I am a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk* of the printer of the

Imperial Valley Press

a newspaper of general circulation, printed and published daily in the City of El Centro, County of Imperial and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Imperial, State of California, under the date of October 9, 1951, Case Number 26775; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

08/17.

all in the year 2018

I certify (or declare) under penalty of perjury that the foregoing is true and correct.



SIGNATURE

Name of Account: I C AIR POLLUTION
 CONTROL
 Order Number: 11205953
 Ad Number: 31436487

* Printer, Foreman of the Printer, or Principal Clerk of the Printer

Date: 17th day of August, 2018.
 at El Centro, California.

This space is for the County Clerk's
 Filing Stamp:

RECEIVED

AUG 22 2018

AIR POLLUTION
 CONTROL DISTRICT

NOTICE OF AVAILABILITY
OF THE DEMONSTRATION OF THE OCCURRENCE
OF FOUR EXCEPTIONAL EVENTS (EE)

The Imperial County Air Pollution Control District (Air District) has prepared four Draft Exceptional Event (EE) Demonstrations, which support the requested exclusion of measured 24-hour concentrations at the Air District air monitoring sites. Listed below by date, site and concentration as measured by a continuous Federal Equivalent Method monitor (FEM) are the four Draft EE's.

August 19, 2016 and August 21, 2016
 Brawley -156 µg/m³ and Westmorland -164 µg/m³
 El Centro - 170 µg/m³

September 19, 2016
 Westmorland -177 µg/m³

October 30, 2016
 Brawley -162 µg/m³

December 16, 2016
 Brawley -845 µg/m³ and Calexico -238 µg/m³
 El Centro -207 µg/m³ and Niland -530 µg/m³
 Westmorland -733 µg/m³

The public and all interested parties are encouraged to review and comment on the four Draft EE's listed above. These demonstrations provide the supporting evidence that on the days indicated for 2016 Air District air monitors were affected by transported elevated levels of particulate matter of an aerodynamic size less than 10 microns (PM₁₀). Winds, associated with a weather event suspended and transported PM₁₀ into the region affecting areas within San Diego, Riverside, Yuma and Imperial counties. The four Draft EE's provide the scientific justification for the requested exclusions. The Air District is soliciting and accepting comments for 30 days commencing the date of the publication of this notice. The final closing date for submitting comments is September 17, 2018 by close of business.

The four Draft EE's for days listed above are available for download at the Air District website at www.co.imperial.ca.us, under "Air Pollution". To view a hard copy of any of the four Draft EE's, please visit the Air Pollution Control District office at 150 S. 9th Street, El Centro. Should you have any questions or concerns please feel free to call our office between 8am and 5pm at (442) 255-1800 and ask for Monica N. Soucier.

L273

Au17

Fig A-50: A copy of the Imperial County Air Pollution Control District official record (affidavit) affirming the publication of the notice of availability of the Exceptional Event Demonstration for December 16, 2016. The date for closing comments was September 17, 2018

FIGURE A-50
IMPERIAL COUNTY
COMMENTS REGARDING THE OCTOBER 30, 2016 EE DEMONSTRATION

The ICAPCD did not receive any comments